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Editor :
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Engineering and Management

A Case for Interdisciplinary Collaboration

H.J. Jani*

The atomic models of teaching confined to the particular disciplines have been found wanting in getting to the grips with the emerging realities of the modern world, where the multifaceted problems call for an integrated approach. Engineering is one faculty which has adapted, since decades, courses from various other fields like mathematics, physics, chemistry etc on which an integrated structure of technical courses has been built. It has been working successfully over the years and engineering graduates have reached the peaks of the organisational structures in the present and the past. It is clear that with the explosion and expansion in the technical knowledge, faculty of engineering has an increasingly crucial role to play in the developmental activities of the country. However, the ever increasing competitiveness in the business, over the last few years, has shifted the trend from seller's market to a buyer's market. The competition is expected to be more fierce in India in coming years because of the opening up of Indian Economy. The engineers, therefore will be required to fight at many fronts. But, is our present engineering curriculum able to give the fresh engineers the edge they require to face the challenge?

The following issues are to be looked into by those responsible for implemention, and academicians of the technical education

1) Can a design engineer design a product without looking at what the market demands?

2) Can he ever overlook the increasing competition in terms of price, changing features of product, packaging, and promotion?

3) Is it possible to talk of a high "factor of safety" when Japanese are dumping the global market with 'use and throw away' type of products?

4) Can an engineer be a good marketing person when he does not have the knowledge of the full form of F.O.R. when he comes out of an engineering college?

5) Can an engineer, when he rises on the hierarchical ladder of the organisation, become a good manager where he has to use less of his technical knowledge and more of commercial and financial knowledge and develop managerial and administrative capabilities?

6) Can a production engineer produce any goods at competitive prices without understanding the cost aspects of the raw material and labour inputs?

The answers to these and similar questions are "NO" unless the engineers are equipped with additional knowledge of management. It is, maybe because of these reasons, that 60 to 80 per cent of the students joining premier management institutions are engineers. It is not the intention either to establish that any engineer who has no management knowledge cannot be a good manager, or experience has no role to play in the working knowledge and style of a successful manager, or to degrade the technical education. The issue which is to be emphasized is the need for interdisciplinary curriculum of engineering and management streams. Today's scenario demands the inter-weaving of management knowledge with the technical knowledge in the same way as mathematics, physics, and chemistry have become the part of engineering curriculum. This requirement can be understood quite clearly, once the jobs which an engineer can take up are studied in details.

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A fresh engineer of any discipline may join an organization or may start his/her own business. The departments in which engineers have been generally employed are production, design, marketing, projects, or purchase. It is quite understandable that the knowledge of management is absolutely essential in addition to entrepreneurship capacities if the engineer starts his own business.

In case the engineer is absorbed in Production or Design Department, he must have knowledge of costing, cost reduction, and aesthetic appearance of the product. The topics of work study and value analysis in the engineering curriculum do talk of reduction in cost and higher productivity. However, a very few persons working in production and design really understand the intricacies of costing.

In the field of marketing and purchase, a person talks of price, delivery period, payment terms, duties and taxes and what not, in addition to the technical specifications. This is the case for a simple quotation or purchase order. In most of the tenders, the commercial terms and conditions run into more pages than the technical specifications. The subsequent discussions after the offer, and before the finalization of the order are techno-commercial discussions and not the technical discussions. When the goods are despatched, there is an "Outgoing Gate Pass", "Excise Duty Gate Pass", "Railway Receipt" or "Goods Consignment Note", "Negotiating the documents through bank", "Insurance" and so on and so forth. When the goods are received, there is "Octroi", "Open Delivery Certificate" and what not? An engineer in marketing or purchase spends equal time on commercial and technical matters if not more on commercial matters.

In projects also a similar situation occurs atleast for the higher positions. Hence, the engineer has to grasp the commercial knowledge as he grows in any organization. If this is the case, is it not advisable to think of an interdisciplinary collaboration of the engineering and management knowledge? Some of the institutes have already started working on such a collaboration. It is learnt that the engineering college and management institute in Manipal have joined hands to offer the degree in engineering and management in five years instead of six years. The selected final year engineering students take up the study of first year management subjects in the evenings or on holidays. After completion of engineering, they complete their second year courses in the management institute.

Ofcourse, all the students entering engineering colleges cannot be imparted with the management knowledge. However, around 40 to 50 students can be considered every year for this type of interdisplinary programme. If the latest developments of launching five years Master of Business Administration (MBA), or Master of Management Studies (MMS) Programmes are any indication, it is high time that engineering colleges seriously start thinking of incorporating management modules in their curriculum. If computers can be a part of engineering studies, why not management?

If latest trends of job opportunities and pay structures are of any significance to indicate value to job seekers, it can definitely be said that management graduates with even arts or commerce background are preferred to the engineering graduate only (without management knowledge). It is therefore suggested that engineering knowledge should be backed by management education. For this purpose, the following structure is recommended for the interdisciplinary collaboration of engineering and management.

An engineering college in consultation with the university and the All India Council for Technical Education can decide the maximum number of students to whom it wants to offer an engineering and a management degree, as well as the selection process of the students. There are about fourteen subjects in the first year of MBA Programme. A few of the courses like Quantitative Techniques for Management, Operations Research, Computer Application for Management, and Production Management are taught under the engineering curriculum in one way or the other. A little additional input — in the simi-

(Contd. on page 12)

Private Provision in Higher Education

Removing Confusion and Recognising Value

M.S. Ramamurthy*

The Backdrop

Recent and not so recent pronouncements of government regarding its inability to provide increasing financial grants to the higher education system and government's exhortation to the system to generate its own resources including tapping industry have once again brought up issues of private resources and public funds into discussion in society. Some discussions are informed but many are not so well informed discussions as it is only bound to be. Both society in general which has been for so long used to receiving higher education at heavily subsidised rates and institutions which have been used to receiving grants from government so generously have reacted on predictable lines. Everyone of the players is somehow confident that government will not totally withdraw its financial support to the higher education system, and only some marginal adjustments may take place.

The Stage

The issue of finding adequate resources for higher education is no doubt a complex one. As a theoretical and philosophical statement, even based on what one sees in some parts of the world, the exhortation to tap private resources will be found to be in order. But a further analysis will show that it is not likely to turn out into a practical reality under present conditions. One can write a book on what the realities are and how private industry is unlikely to support the higher education system to the expected extent. But suffice it to point out to one fact to prove the above statement. The University Grants Commission announced sometime ago that it would support private initiatives in setting up 'deemed to be universities' in areas relevant to needs. Only, these institutions were not to expect UGC grants. How many took advantage of this 'liberalisation' is for everyone to see. It should be evident therefore that exhortations are unlikely to succeed and private industry is unlikely to bail out the government insofar as honouring government's own commitment of resources to higher education system is concerned.

What then becomes more urgent and important is to see whether there is any other method. Reality is the existence of a large system, which we may call as a 'parallel system'. This parallel system, as is obvious, consists of institutions sponsored, controlled, funded by the private sector. They are all institutions which do not enjoy any kind of government support. Neither are they recognised nor do they form part of the educational statistics of government even though they have a legal entity and pay tax to government. These institutions provide education and impart training in skills which find an acceptance by the market. Thousands of these institutions have come to be in the last one decade and many may have been in the field for a longer period. And several of them operate across the country. Many of these institutions have made heavy investments in addition. If they are reaping rich rewards it is because lakhs of students, largely belonging to the middle class, subscribe to it. Students subscribe to this system because they see that it adds value to whatever they have done as students of the formal system. Even if they have to pay an 'economic' fee to the institutions for adding the perceived value to their formal education, they do not hesitate. Obviously, they do so not out of any dominant desire to while away their time but to ensure an easier access to the job market. It is society which has sustained this system with its own private resources, and is not in the least subsidised through public funds. Many of these institutions may not be delivering the best possible skills in their chosen area. Say, for example in computers, in which field alone, it is reported, over 5,000 institutions are operating. But even those that do not deliver the best manage to continue simply because even students turned out by them do find a job sooner or later however low the wages that such a job may be fetching them. The crucial factor is that but for this skill

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addition even these low wages may not have been earned. A very thin line may separate jobelessness and a low paying job. It is bridging this thin line that the poorer institutions are engaged in. If one avoids idealistic attitudes and takes a pragmatic approach one cannot but accept that even these institutions are into human resource development. The same can be said of many other professional and semi-professional courses that other institutions in this category are offering. It is important to note that apart from computer training, private institutions offer courses in management, catering, hoteliering, tourism, interior decoration, fashion designing, food preservation, etc. A comprehensive list of such offerings would make an interesting reading.

The industry or other establishments which employ students turned out by these thousands of unrecognised institutions also gain advantages. Their costs of induction training goes down to the extent the recruit has learned by undergoing the training. The recruit also is conscious that it is what he/she has learnt while studying at the private institution that has given him/her a value in the job market. In a situation where different employers are looking for employees with different levels of skills there is a market for various kinds of human resources.

The UGC has been calling upon universities and colleges to make the general purpose Bachelor's degree programmes relevant by adding a vocational component. The efforts made by universities in this behalf and their outcome has not been enthusing so far. The reasons for the lack of enthusiasm on the part of universities to add an element of vocational education in their general purpose degree programmes are largely due to inbuilt constraints in the institutions. On the contrary, the private training institutions largely give vocational training of an acceptable kind. In other words the private institutions provide those skills identified by the policy makers and those that the market demands. And, this they do, without drawing upon government resources.

The Mindset

Before we proceed further it is necessary to get over the problem of definition of the word 'private' insofar as it relates to the higher education system. In the formal system, which comprises the universities and colleges recognised by the UGC/government, the vast majority of colleges have been founded by and also managed by private trusts/societies. They however are largely funded by UGC/government. There are also universities founded by private initiative. Take for example the Birla Institute of Technology & Science, Pilani or the Thapar Institute of Engineering & Technology at Patiala. The Dr. Hari Singh Gour Viswavidyalaya, Sagar came to be thanks to a munificent donation by Dr. Hari Singh Gour. One can give more examples of universities coming into being through largely private initiatives and private fund support. The legitimacy that these universities have come to have through state intervention has led to an acceptance in the public mind. However, the dominant examples that are automatically invoked in public mind of 'private institutions' are those private colleges charging what has come to be known as 'Capitation Fee' and private institutions set up in the parallel system.

Thanks to the intervention of the Supreme Court even the capitation fee charging colleges are hopefully now regulated insofar as granting admission on the basis of merit is concerned. Since these capitation colleges are affiliated to universities their legitimacy gets granted. Negative feelings persist only with regard to those private institutions that are outside the formal system which we have chosen to call the 'parallel system'. The reality however is that this parallel system is not only large but is also subscribed to by many students.

Private institutions in higher education then are those that are unaided by government. However, it is only institutions which are in the parallel system, all of which are unaided by government, that hold the attention in public mind.

The Action

Is it then not possible for the government to accept the two realities viz. its own inability to continue to provide funds needed by the higher education system and the existence already of a large and popular parallel system, and evolve methods to bring the parallel system also into the mainstream? Why has no thought been given to this? In examining the last question two things stand out as obstacles. One is the dominant feeling evoked whenever one thinks of private provision in higher education, already referred to above.

The persistence of a negative connotation of private provision in higher education in the public mind is largely due to the definition that one chooses to give the word 'private'. The impact of liberalisation in the economic and industrial fronts already announced is bound to be felt on other areas also. While sectors like transport, telecommunications, finance have already responded to a greater or lesser extent to this new thinking, policy makers for the education sector however have not done so till now. For policy makers in education to respond to the new imperatives one significant factor has to be taken into account. Not only is the education sector proverbially orthodox and sluggish; but, also liberalisation means more hard work for all concerned in the education sector. That is not the cup of tea of the active players in higher education. They all have far too long been used to an easy life, exceptions apart. Private institutions just took advantage of this fact and have stepped in to bridge the gap that exists in our formal system between education and skill formation needed by the market. Viewed thus private institutions do contribute significantly to productive forces in the economy. Only by having a realistic perspective about the role private institutions are already playing in higher education can the mindset begin to change. This change has to be brought about through a conscious effort.

The second obstacle is the fact that what the private provides is of uneven quality. Not that unevenness does not exist in the publicly funded formal system. But since the public higher education system, once set up, enjoys a kind of automatic acceptance, unevenness is not brought to the fore except in specialist kind of discussions. How is one to bring about an evenness of quality in both private and public sector in higher education? This is the issue that needs to be addressed. Recognition and accreditation are two mechanisms available for the purpose of instilling more responsive attitudes. It is this issue which needs to be addressed and detailed operational mechanisms evolved. Experts can be asked and will also on their own address themselves to evolving a mechanism only when what has been noted above as the first obstacle is removed through a conscious change of present policy. Only then will emerge the full potential of society in training its human resources.

Two advantages would flow automatically from this proposed change. We would come to recognise that all education and training after the secondary stage (10+2 in our context) is higher education, as it only should be. Secondly, once society sees that higher education need not always be provided for through public outlays only the burden on the exchequer will considerably ease.

The Conclusion

This article has attempted to define 'private' in the context of realities of higher education in India. Such an examination and definition of 'private' is important to facilitate communication and avoid confusion. The parallel system is of value to society as also to government. It is therefore important to bring the parallel system into the mainstream.

It is now for the political powers that be to take initiative in the matter. To ignore reality, to fail to see trends in financing higher education that have emerged globally and to continue with our current mindset and stifle private initiative will only be a self inflicted suffering with serious repercussions for society as a whole. A new awakening taking a holistic view of higher education and shrugging off the old bias is necessary. And it is very much within the realm of a possibility. The Supreme Court intervened to regulate working of 'capitation colleges'. To enable society to view 'private' institutions without blinkers, the government has to intervene to bring the parallel system into the mainstream through a policy initiative.

Government Policy has to operate at two levels. One is on what has already been pronounced viz. more private participation in higher education. It is only then that the burden on the government's exchequer will get reduced leading to government having more funds for improving the infrastructure which includes primary, secondary and adult education. The second is bringing the parallel system into mainstream as noted above. The Government's policy would no doubt include safeguards to ensure that private provision in higher education neither becomes a vehicle for unbridled profit making nor for dumping substandard products on society.

Vocationalisation of First Degree Education

P.H. Sethumadhava Rao*

There has been a phenomenal increase in the field of higher education resulting in a situation of unplanned proliferation and inadequate infrastructural facilities at many places. As of today, there are 213 universities (including deemed to be universities) and nearly 8000 colleges in our country. The student enrolment is more than 4 million — nearly 88% offering graduate courses, 10% postgraduate courses and 2% research. There is a mismatch between education and employment and lack of planning in the setting up of new universities and colleges has led to a great degree of frustration. The complexity coupled with pressure to expand, mismatch of supply and demand and limited resources pose a serious challenge to educational planners in India. A steady erosion in the quality of teaching and research is taking place. We have in our country unemployed and unemployable graduates due to variations of standards that exist in the system. There is an urgent need to enhance the employability of university graduates especially in the context of increasing unemployment.

The University Grants Commission has drawn a very pragmatic proposal to introduce vocational subjects as part of existing first degree courses viz. B.A./B.Sc./B.Com. These courses were recommended by an expert group appointed by the Commission after deliberating on the issues exhaustively. These courses, in four broad disciplines — Science, Engineering & Technology, Arts & Humanities, and Social Sciences, Commerce, Economics & Management — have a detailed syllabi for each of the identified course. Such a restructuring of the existing courses with the introduction of one of the vocational subjects integrating with the academic structure has been envisaged to provide knowledge and skills required for creative and productive functioning in the 21st century, generating more employment potential and avenues for self-entrepreneurship. The scheme has been worked at macro and micro levels. The main objective of various vocational subjects introduced is to prepare students for self-employment or for getting employment in the market.

While introducing the vocational courses, the following facts have been kept in view

i) The content of a vocational subject will in no way be inferior to the content of the other two/three subjects that a student will choose.

ii) The employment potential has to be given top priority so that the students can get both theoretical and practical knowledge so that they are successful in their ventures.

The four important components of the scheme relating to vocational courses are (a) Preparation of reading material for the teachers and students; (b) Training for the teachers; (c) Monitoring & evaluation; and (d) Creating awareness of the programme among the public through media etc.

The basic objective of the programme of vocationalisation is to prepare graduates for employment (including self employment). Considering the limited absorption capacity of the employment sector, the courses help in development of capabilities which will enable students to set up their own small enterprises with support from financial and other institutions.

On the job training is an essential component of the vocational courses. The training has to be given in employing establishments. The objective will be to expose students to the requirements of the world of work and to develop in them skills which are needed for specific jobs. On the job training has to be provided during vacations.

In subjects like functional Hindi, functional Sanskrit, Communicative English, one can see that though these subjects appear traditional in nature, the graduates oriented in these subjects can find jobs in the market. Various media—print, television, radio and government agencies can absorb them. There are a number of job opportunities in the area of translation in offices of various governments & public & private sector banks etc to implement official language policy.

One can observe dearth of Sanskrit scholars having expertise in traditional systems, connected with *Karma Kanda, Vedas, Upanishads*. Inspite of great strides in modernism, rites & rituals, sacriments & ceremonies have got an important place in our social & religious life. India is a deeply religious country and the knowledge of functional Sanskrit is a societal & cultural necessity. Hence it has cultural relevance even in modern times.

Even in case of science subjects like Industrial Chemistry, Food Science & Quality Control, Industrial Microbiology, Bio-technology, Sericulture, Instrumentation, Mass Communication & Video-production, there is a great deal of job potential for the graduates. The country needs people having expertise in these areas. The main point is that on the one hand we see a large number of unemployed graduates and on the other hand a number of jobs lying vacant for lack of properly qualified personnel. The proposed vocational courses will certainly help in solving the unemployment problem.

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The Eleven Stages of Problem-Finding

D. Raja Ganesan*

On account of the shortcomings listed in a previous issue of this forum (Raja Ganesan, 1994) the maiden researcher — one who is about to begin his first research project in life — is seldom formally and properly oriented to the task of obtaining a suitable topic for his research. As a result, when a typical maiden researcher interacts with seasoned researchers and/or reads the literature in his chosen area he gets the impression that there are "acres of diamonds" under his very feet. But when he begins the spade work the entire ground often recedes from under his feet, leaving him high and dry in thin air ! (Raja Ganesan, 1986). His enthusiasm often ends in confusion and the first spell of despair. Many of them spend as high as half the total project time in chasing, choosing, settling upon, sharpening and coming to grips with a viable topic for research if they are left to fend for themselves. Some of them, however, may have already managed to catch glimpses into this phase of research during informal and incidental exposures.

As a result, they may be in different *stages* of progress in obtaining a topic and also have different degrees of sharpness and thrust in topic hunting. The former — stages of progress — refers to their *external* orientation to the subject matter content of their research and the latter — degree of sharpness — refers to their *internal* cognitive competence. This article deals with the external dimension only.

With regard to their external orientation to the subject content of their research, researchers — maiden or seasoned, for that matter — may be in any one of the eleven successive stages mentioned below. The maiden researcher must be cautioned before hand that none of these stages — especially, the first three — is bad or undesirable as such. It is only certain *reasons* behind some instances of these states that make them undesirable.

Stage 1

Those who are totally *blank*: Maiden researchers in this stage do not even know what broad area of their subject they would like to work in: they would want their guide to suggest — "donate" — a topic, any topic for that matter. As it was mentioned just now this 'blank' state is not bad by itself — unless it reflects a bankruptcy of knowledge of the subject matter on the part of the maiden researcher. Many institutions and organisations do need professional researchers who can fully dedicate themselves to topics stemming from the exigencies of the employer's requirements. Of course, the researcher for his part as a professional must be able to provide appropriate inputs for pruning and honing the project towards the objectives at optimal costs (Cronbach, 1982).

However, a maiden researcher *qua* researcher must necessarily acquire the competence for finding problems on his own for research. Unless he does so his professional training cannot be deemed to be full-fledged and complete. The solution for bankruptcy of knowledge of the subject matter on the part of a maiden researcher is the compiling of a bibliography, organising it in an inverted pyramidal design: the inverted pyramid must have its moorings in the enduring classics in the field and then progressively comprehend ever larger numbers of titles related to the theme (Raja Ganesan, 1993). When the researcher comes to the matrix of variables in his problem space, the bibliography must facilitate an integrative review: The goal of an integrative review is to summarise the accumulated state of knowledge concerning the relationships of interest and to highlight important issues that research has left unsolved (Taveggia, 1974). Cooper (1982) has identified five techniques for retrieving information on a research problem towards making an integrative review.

Stage 2

Those who are *confused*: Unlike those who are blank, the confused ones would have given some thought to what they might be interested in doing. But they seem to be interested in and excited equally about any and every area. Again, unlike the *blank*, the *confused* would not ask for, nor readily accept any topic that others around might suggest. Many of these topics do seem to interest them but not fully

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yet to the point of undertaking even a preliminary exploration. Some of these seem to be haunted by one particular topic which, alas, they are not able to identify and articulate.

Again, all instances of confusion during the initial phase of a research project cannot be deemed as bad. The renowned anthropologist Margaret Mead, for example, once wrote in a personal letter that at the beginning of a field trip she would feel that she understood everything but later the problem would start, "a period of despair, a sense that all is unknowable" (Ferrucci, 1990).

The confusion in cases like Margaret Mead's is seldom due to the researcher but due to the apparent chaos and contradictions in the focus of their investigation in the frontiers of the field — as it is seen through the prevailing concepts and theories. This is, in fact, the proper place for the scientist to begin — "in the midst of the unknown, the chaotic, the dimly seen, the unmanageable, the mysterious, the not-yet-well phrased" (Maslow, 1970). Discerning order in this disorder is the real professional challenge a researcher intrinsically looks forward to (Roe, 1961). But, if the confusion is due to inadequate understanding or, worse, misunderstanding of the structure and content of his chosen field on the part of the researcher it is certainly bad. The solution for subjective confusion within the researcher is again an intensive, critical and cross-referenced study of the books and articles in a comprehensive, concentric and pyramidally designed bibliography. The thrust in the critical study should be in *differentiating* among the various concepts and theories, especially those that are *prima facie* very similar. A solution for sorting out objective confusion — confusion in the focus of investigation in the field — is adoption of the *systems approach* (Laszlo, 1972). It must be mentioned here that the amorphous content of this very series of articles has been sorted out and structured only by the application of the systems approach to learning contexts (Davis et al., 1974; Kaufman, 1972).

Stage 3

Those who are *topic-hopping*: Unlike the *confused* who remains uncommitted to any direction in his search for the topic, the topic-hopper enthusiastically commits himself to a particular topic, pursues it vigorously for a while, only to abandon it in favour of another, more "exciting" topic in an entirely different area and direction, perhaps just at the moment when he is to come to grips with it and has to work a little harder than before to crack the nut (Raja Ganesan, 1986). The researcher is often unaware of this tendency which operates from the unconscious level of his mind. Topic-hopping too cannot be deemed bad outright and wholesale. Perhaps, the researcher has reached what is for him an insurmountable barrier, though not a dead end. Or, the new topic contemplated is born out of a brilliant insight. Hanson (1967) has in fact provided a distinct position for such unexpected leads in his *"Taxonomy of Discovery Activities"*. He calls this type "trip over" discovery. A "trip over" discovery is one in which the "discoverer is totally unprepared for the totally unexpected — both in the psychological and in the theoretical sense". Of course, even such a trip over discovery can be made only by a mind that is already familiar with the subject, tuned to attending to any and every thought or datum bearing some relation to the subject, and able to see almost every event in terms of the relevant subject — even an apple falling on one's head, as it happened to Newton, or one's own body buoying up in the bath tub as in the case of Archimedes (Ferrucci, 1990).

i. As a rule (which implies that there can be exceptions) change of topic is not advisable when the candidate has already changed it many times on his own without any external reasons like lack of facilities and resources;

ii. further, this change has been made just when the maiden researcher had to move from the relatively passive mode of reading the relevant literature on to the active mode of doing some original thinking like crystallising and conceptualising the chapter themes and/or articulating the syllabi for each of these in the case of theoretical projects or doing some original work like designing the tool — questionnaire, the interview schedule — in the case of empirical studies;

iii. the new topic is wider in scope now than the one with which the researcher began instead of being more narrow and sharply focused;

iv. the proposed new topic is radically different, has no resemblance of relationship whatsoesver to the earlier topic and the researcher is not able to discern even a weak and recondite thread of relationship. A researcher in education who suddenly jumps far and away from Philosophy of Education to Economics of Education is an example for such topic-hopping. However, if he cites the couplet from

Thirukkural, a classic ethical treatise in Tamil, "Education alone is the enduring and incorruptible wealth, the rest are insignificant" as a source of inspiration for the proposed change, he must be permitted to explore. Campbell et al (1982) are of the view that if a researcher insists on going ahead with a topic or topic change despite all indication to the effect that it is not worthwhile and/ or not feasible, we have no unequivocal yardstick with which to veto it down. Of course, requiring the maiden researcher whose case is slightly different from that of a full-fledged professional to scrutinise and justify his proposal for change thoroughly in the light of the four criteria listed above is a legitimate safeguard against fickleness.

Stage 4

Those who are having a *broad area* within their subject. Examples from Psychology are: Social Psychology, Organisational Psychology, Educational Psychology and Clinical Psychology; Child Psychology, Psychology of Adolescence, Psychology of Sex/ Marriage and Family, and Psychology of Aging; or, Psychoanalysis, Cognitive Psychology and Behaviourism.

Stage 5

Those who are more *circumscribed* say, in terms of the intersection between two or more branches like *Psychoanalysis* of Organisations, Clinical Psycho-(patho)logy of Aging etc.

Stage 6

Those who are more *sharply focused* on a particular phenomenon like sleep, death, stress, laughter/ humour or dreams; or, on techniques like free (word) association, behaviour modification. The latter would like to apply the technique in a suitable and, as yet, unexplored context, and find its effectiveness vis-a-vis one or two other more conventional techniques. For example, school phobia "involving persistent non-attendance at school, excessive anxiety and somatic complaints" has been treated in various ways. Gullone and King (1991) have surveyed the acceptability of four alternative treatment options : behaviour management/modification (that is, enforced attendance), home tuition with psychotherapy, hospitalisation and medication. They found those options acceptable in that order of preference. Evaluating psychoanalysis — alone or in conjunction with behaviour management — as a treatment option for school phobia would be an innovative topic in this context.

Stage 7

Those who are almost on a *theme* like dreams of adolescents, dreams of prisoners — or, for that matter, dreams of maiden researchers themselves ! (Now maiden researchers can understand how seasoned researchers are right in giving the impression that there *are* "acres of diamonds" under the feet of every maiden researcher, for digging up, cutting and polishing into a suitable topic).

Stage 8

Those who have articulated the theme they have in mind into a *precise question like*, "Are children from larger families more sociable/popular than those from smaller ones?" "Do bosses enjoy the more a joke when it is at the expense of servants and *vice versa*?" "Are there explicitly observable clues to distinguish among genuine, false and sad smiles?"

Stage 9

Those who have expanded their main question into a number of related subquestions say, in the form of an exploratory exercise/working paper.

(A list of select titles of such exploratory outlines for research in education contributed by the author as editorials in *Experiments in Education*, a monthly journal devoted to educational research and development, are given in the Appendix.)

Stage 10

Those who have translated their main question which would, as a rule, be in ordinary everyday language into a title formulated in terms of received concepts and categories of the concerned discipline. A *received* concept or category is one that has already been coined, accepted and defined in the concerned discipline. "Stimulus", "response" and "sociometric status" are examples of *well-defined* concepts in learning theory and social psychology respectively. "Attitude", "personality" and "education" are also received concepts but there is much less unanimity about their connotation and denotation — that is, the scope and limit of their meaning. A well-defined concept can be easily operationalised — defined with reference to observable events. There cannot be such ready operational definitions for the concepts about which there is no unanimity. If they are operationally defined there will invariably be some simplification and "sacrifice" of their rich and complex meaning at one end or a dilution and vagueness of their meaning at the other. "Attitude" means "a disposition (towards something)." "Attitude" is widely operationalised in the behavioural sciences through attitude scales. These scales consist of statements or pairs of stimulus words to each of which the subject is required to respond. But his behaviour in real life situations may not exactly correspond to what he says through these scales — especially on sensitive issues like caste. These scales can at best lead to an "emerging science of consistencies among verbal reports obtained on questionnaires", not to reliable predictions of behaviour in real life situations (Campbell et al., 1982, p.30). The implications of this difference for topic formulation are not followed up here but are pursued elsewhere.

A received *category*, unlike a concept, is explicitly abstract and theoretical. It can have no empirical referent and thus cannot take on an operational definition in terms of observable events. But a category can be *rigorously* — though not succinctly — defined. A category is an ultimate postulate, a cornerstone for the discipline. Though it cannot be operationalised, a category can nevertheless provide deeply meaningful insights into the dynamics of certain phenomena. "Libido" and "Death Instinct" are examples for categories from psychoanalysis. "Death Instinct" refers to the inherent tendency of an organism to seek death — its own or another's, the target depending on certain internal and/or external conditions. Sigmund Freud, who originally propounded the categories of "libido" — the manifest force of the Sex Instinct — and the Death Instinct held that they were dualistic, but coexisted within every organism. Norman O.Brown (1959) acknowledged that they coexisted within one and the same organism but in a *dialectical* rather than a *dualistic* relationship. This category of Death Instinct, as it has been modified and reinterpreted by Brown, can give deep insights into the psychodynamics of terrorism — especially, the peculiar affinity and fascination that terrorists have for unnatural — manmade death in both its forms namely, suicide and murder. The theme can be formulated in the interrogative form, "Do terrorists live under conditions of easy catalysis of the Death Instinct?", or, "Is the Death Instinct easily catalysed in terrorists?" When they are translated into the standard subcultural lexicon of their respective theoretical domains, each of the questions listed above would read as follows:

Table 1

No.	*The Research Question in Ordinary Language*	*The Standardised Version*	*Remarks*
1.	Are children from larger families more popular among their classmates than those from smaller families ?	Family Density Sibling Constellation and Socio metric Status in the Classroom	"Family density" connotes not only the number of brothers and sisters the subject has but also the spacing—years of interval between their births—among them. Similarly, "Sibling Constellation" connotes all possible permutations and combinations in terms of rank position in birth order and the gender of siblings.
2.	Do bosses enjoy the more a joke when it is at the expense of subordinates and *vice versa* ?	Directionality of Transitory Dominance as Communication Variable Affecting Humour Appreciation (Zillman and Cantor, 1982)	The text of this title does not as such denote boss-subordinate pairs alone but any pair that is normally in asymmetrical power relationship: for example, it can also connote researcher-guide relationship !
3.	Are there explicitly observable clues to distinguish	Felt, False and Miserable Smiles (Ekman and Friesen, 1982)	This original version of the title given by the authors of the

among genuine, false and sad smiles ?		article as such does not indicate that they are dealing with *clues* to distinguish among these three types of smile though that is the thrust of the article. The following amended version of the title would reflect more accurately the content of the article: Discriminant Signs for Felt, False and Miserable Smiles in a Facial Action Coding System.
4. Should a Teacher Marry a Teacher ?	Marital Adjustment and Job Satisfaction among Teachers with Teacher and Non-Teacher Spouses.	"Job satisfaction" here does not specifically denote spouse-related sources of job-satisfaction but is presumed to subsume it.
5. Is the Death Instinct easily catalysed in terrorists ?	Death Instinct: A Pivotal Psychoanalytic Clue to Terrorists' Suicidal and Homicidal Behav-iour?	The question mark at the end of the standard version of the topic is to indicate that it is only a hypothesis as yet: when it is confirmed after research, the report must be titled *without* the question mark.

Wherever necessary a clue must be added to the text of this standard version of the *topic* towards identifying the particular element, technique or context that would distinguish the project on hand from possible similar ones, and thus *individuate* the *topic* into a unique *title*. Yes, when the topic stated in terms of received concepts is identical for two or more projects, each of the latter ones must add a clue to distinguish itself into a unique title.

Jackson (1980) gives a *survey of the methods* for integrative reviews and has titled his article in *Review of Educational Research* as just *"Methods for Integrative Reviews"*. Building on Jackson's and others Cooper (1982) has conceptualised the research *review itself as a scientific inquiry* and given *guidelines* for conducting such reviews. Cooper has appropriately titled his article in a subsequent number of the same journal as *Scientific Guidelines for Conducting Integrative Research Reviews.*

Thus the latter article is distinguished from the former by virtue of the conception of the review itself as a scientific inquiry and the guidelines it offers for carrying it out. The distinguishing elements of the contents of Cooper's article are duly reflected in the semantics of the title — by addition of the words "Scientific Guidelines", "Conducting", "Research (Reviews)" to Jackson's title, "Methods for Integrative Reviews".

Stage 11

Those who have also made a preliminary evaluation of the suitability of the topic they have chosen.

(Extracts from the author's forthcoming book on Problem-Finding)

Appendix

(List of Working Papers contributed as editorials in Experiments in Education)

Volume 14 (1986)

1. Humour in the Classroom: A New Horizon for Educational Research. 2:21-22

Volume 16 (1988)

2. Should a Teacher Marry a Teacher? 1:1-2
3. The Importance of One's First Day in School.7:141-142
4. Images of the College Student: Myth and Reality. 11:233-234

Volume 17 (1989)

5. Having One's Own Offspring as a Student in One's Own Classroom. 3:49-50
6. The Vice-Principal: The Head that Does Not Wear the Crown. 5:101-102
7. Education about Money. 11:271-272

Volume 18 (1990)

8. Humour in Academic Writings. 2:31-32

9. Pupils' Late-coming in Schools. 3:65-66
10. Sleep and Education. 4: 95-96
11. Wanted: Studies about Siblings in Schools. 9:225-226
12. Suggestions about "Suggestions for Further Research". 12:299-300

Volume 19 (1991)

13. Directions for R & D in Distance Education. 2:33-34
14. Personality Changes in the Researcher through Significant Projects. 3:67-68, 99
15. Wanted: "Stress" Research about Valuation of Examination Scripts. 6:161-162
16. Wanted: Research about Quiz Programs. 7:181-182, 207.

References

Brown, N.O (1959) *Life against Death. The Psychoanalytic Meaning of History*. London: Routlege Kegan and Paul

Campbell, J.P., Daft, R.L , Hulin, C.L (1982) *What to Study: Generating and Developing Research Questions*. New Delhi : Sage Publications

Cooper, H M (1982) Scientific Guidelines for Conducting Integrative Research Reviews, *Review of Educational Research*, 52(2):291-302

Davis, R.H, Alexander, T.L., and Yelton, S.L (1974) *Learning System Design*. New York: McGraw Hill Book Company

Ferrucci, P (1990) *Inevitable Grace: Breakthroughs in the Lives of Great Men and Women - Guide to Your Self-Realisation*. (Tr. by David Kennard). Wellingborough (England): The Aquarian Press. Chapter 5 "The Way of Science"

Hanson, N.R. (1967) An Anatomy of Discovery, *The Journal of Philosophy*, 64(2) :321-352

Kaufman, R.A (1972) *Educational System Planning*. Englewood Cliff, N.J.: Prentice Hall, Inc.,

La France, M (1983) "Felt versus Feigned Funniness: Issues in Coding Smiling and Laughing: in P.E. McGhee and J.H. Goldstein (Ed) *Handbook of Humor Research. Vol 1. Basic Issues*. New York: Springer-Verlag

Laszlo, E (1972) *The Systems View of the World*. New York: George Braziller

Maslow, A (1970) *Motivation and Personality*. New York: Harper & Row Publishers. 2nd Edition

Raja Ganesan, D (1986) Research Topics Do Not Grow on Trees, *Experiments in Education*, 14(9): 151-152

________ (1993) Preparing a Bibiliography as a Prelude to Research, *Experiments in Education*, 21(5) :115-116

________ (1994) Problem-Finding for Research, *University News*, 32(25) :7-8

Roe, A (1961) The Psychology of the Scientist, *Science*, 134:456-459

Zillman, D and Cantor, T R (1972) Directionality of Transitory Dominance as a Communication Variable Affecting Humor Appreciation, *Journal of Personality and Social Psychology, 24:191-198.*

Engineering and Management

(*Contd. from page* 2)

lar engineering subjects — aimed at management orientation can lead to a stage of no necessity of repeating these courses. The remaining ten subjects can be distributed in eight or six semesters of engineering curriculum depending upon the workload of each semester. The help of faculty members of the management programme can be taken for teaching these subjects. A student, therefore, would have gained the knowledge of first year management courses when he/she completes his/her engineering degree in four years.

These students then should be offered the second year management courses in the fifth year. If the student could successfully complete the management courses during these four/five years, the University can award a degree of MBA at the end of the fifth year.

Such a collaboration will be a good synergy, helpful to students in saving their precious one year, and a beginning of interdisciplinary collaboration on which University Grants Commission is now putting a very high emphasis.

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P. R. DUBASHI

Vice Chancellor, Goa University

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Over-Regulated But Undergoverned

Dr. Manmohan Singh, Finance Minister, Government of India, delivered the Convocation Address at the second annual convocation of the National Law School of India University, Bangalore. He said, "Today we have a vast maze of legislation, much of which is rather poorly administered and which provide low level functionaries of the Government opportunities to harass and to delay decision making processes. Today, we have too many statutes, statutory interpretations, rules and regulations, with possibilities of overlapping and conflict built into the system. In some ways, we are a country which is over-regulated but undergoverned." Excerpts

As a citizen, I do know that a sound legal system and an effective machinery for administration of justice at affordable cost are the foundation of any civilised society. The legal system of a country reflects the basic values cherished by a society in its quest for a life of dignity and self-respect for its people. We can take legitimate pride in our country's commitment to the rule of law. But we live in a world of unprecedented change and a successful management of change is a crucial determinant of our country's ability to acquire its rightful place in the comity of nations and to realise the development aspirations of our people. Thus we have to ensure that all our institutions, including our legal system, our policy framework and the machinery of public administration can respond purposefully and with speed to meet the challenges of unprecedented changes in technology, social and economic environment, and external relations that are now in the horizon.

It was in recognition of this necessity that our Government undertook a thorough reappraisal of our economic policies soon after it came to power in June, 1991. Our country has made impressive social and economic progress since Independence. Yet it is also a fact that the pace of progress has fallen short of both the aspirations of our people as well as of the objective potential of our economy. Our economy has over the years grown at a much slower rate than many countries of East and South East Asia. At the same time, there has been no significant deceleration of the rate of population growth. Thus progress in removal of poverty has fallen short of initial expectations. The number of people living below the poverty line today is nearly as large as the population of India at the time of Independence. We are still unable to provide access to elementary education to all our children upto the age of 14. The infant mortality rate of 80 per thousand is still much too high and compares unfavourably with a number of other developing countries in East and South East Asia. Despite a considerable diversification of our economic structure, India has not been still able to finance all its imports through its export earning, thereby necessitating heavy dependence on external aid. Our share of world trade fell from nearly 1.5 per cent in 1950 to less than 0.5 per cent in 1990. In 1990-91, India was on the verge of bankruptcy. For all these reasons, our Government felt that we must have a fresh look at our economic policies so that they really became purposeful instruments of realising our cherished national goals of building a modern, progressive and humane polity, free from the fear of want and exploitation.

The main elements of the programme of our economic reforms are well known and I do not wish to dwell on them in detail. Their basic objective is to accelerate the rate of economic growth so as to provide sufficient job opportunities for new entrants to the labour force at rising standards of living and simultaneously to strengthen anti-poverty programmes targeted specifically to raise the productivity and incomes of people living below the poverty line. In this quest, we have made far reaching changes in our fiscal, financial, trade and industrial policies. Thus, we seek to reduce the fiscal deficit so that we can control inflation and also avoid unsustainable deficits in our balance of payments. We seek to reduce government expenditure on subsidies and on support to loss making public sector units so that more money is made available for meeting basic needs of our people for education, health and for strengthening of anti-poverty programmes and for programmes designed to protect the environment. We seek to reform our tax system so as to strengthen the incentive to save and invest and to minimise the scope for tax evasion. Our financial sector reforms seek to make our banks and capital markets more effective instruments of mobilising national savings for productive investment. Our industrial and trade policies seek to dismantle those discretionary controls on investment, production and imports which had outlived their utility and which over time had become instruments of harassment, delay, uncertainty and corruption.

The new policies also seek to widen the scope for competition so as to create an environment in which our industry has an adequate incentive to reduce costs, improve quality and competitiveness and thereby to export more so as to reduce our excessive dependence on external aid to finance our imports. We seek to provide all reasonable facilities for profitable public sector enterprises to expand but we would like the public sector also to grow in an environment of competition so that it has an adequate incentive to remain efficient.

We do recognise that in a more competitive environment, some productive enterprises may face difficulties and they may require restructuring. But we are firm in our conviction that this restructuring must not be at the cost of workers and we must devise credible social safety nets to protect their legitimate interests.

Overall, the reforms seek to redefine the role of the Indian state in the management of social and economic development. The state will continue to have major responsibilities for macro economic management and for the provision of a macro environment conducive to accelerated growth with reasonable price stability. However, many of the discretionary controls on investment, production and trade having outlived their utility are being removed so that the available scarce administrative and financial resources of the state can be concentrated on meeting those basic needs of our people that cannot be left to be wholly taken care of by the market forces. Hereafter, the state will increase its involvement in human resource development and for regeneration of our agriculture and rural economy.

The process of updating the economic policy framework is far from complete. It is a task which will keep us busy throughout the remaining part of the present decade. This is however, a task which requires active involvement and support from members of the legal fraternity. Every where economic policies become linked to legislation, and virtually all actions of the Government in the economic sphere draw their authority from some economic legislation or the other. In the last forty seven years of our independence, such legislation has expanded enormously along with the expanding interventionist role of the Government. Today we have a vast maze of legislation, much of which is rather poorly administered and which provide low level functionaries of the Government opportunities to harass and to delay decision making processes. Today, we have too many statutes, statutory interpretations, rules and regulations, with possibilities of overlapping and conflict built into the system. In some ways, we are a country which is over-regulated but undergoverned. The growing incidence of smuggling, wide spread tax evasion, corruption, generation of black money and the growing use of Mafia dons in settlement of private disputes are a manifestation of a deep rooted malaise in our social and economic life. Interventionist policies of the past, howsoever well intentioned, have not achieved the desired results, even though they have often provided vast scope for litigation.

The economic reforms launched by our Government seek to reverse these dismal trends. Our emphasis is on strategic controls and regulation and on freeing the economy as far as possible to regulate itself, subject of course to prudential norms laid down by supervisory authorities. Competition is being encouraged so that producers do not use their power to exploit consumers. The reforms require a supportive legal system to provide the necessary impetus for the operationalisation of the national vision for a modern progressive economy and humane polity. But most economists and economic administrators have far too inadequate knowledge of legal issues while the legal experts often lack sound training in economics, sociology and often are not aware of the limited capabilities of public administration. The time has come for the two cultures to interact constructively in the design of a new legal structure suited to the needs of modern times. Thus active participation of the legal fraternity in a reappraisal of economic laws now in force in the country is essential for successful implementation of our economic reforms. We must have a close look at laws which have become hopelessly outdated in terms of both the objectives they were initially designed to serve and the instruments that were chosen to realise those objectives. In any such appraisal, we must bear in mind that in a poor country administrative resources are often as scarce as capital. Too thin a spread of these resources leads to costly delays, uncertainty, corruption and overall ineffectiveness in achieving the objectives of legislation. I have a strong feeling that over the years, the Governments at the Centre and the State have invested far too much of their administrative and financial resources in industry and trade and neglected such basic tasks as provision of a decent system of elementary education and primary health care and control of environmental degradation. There has also been inadequate sensitivity to the gender issues in our quest for equity and development. We have now an opportunity to redress these imbalances. The members of our legal fraternity can play a major role in highlighting the deficiencies in our legal system and how they can be set right. I am very happy to learn the National Law School has a project specifically designed to address these issues.

The fundamental premise for the operation of the rule of law is the certainty of legal principles and the laws. Thus the updating and streamlining of our economic laws in the light of contemporary realities can greatly reduce the costs and uncertainties associated with investment decisions. But the effectiveness of any legal system also crucially depends on the speed with which legal disputes can be settled and remedial measures enforced. This is an area where the citizens of our country have justified grievances. I am told that there are 15 million cases pending in the courts of this land and that it takes an average of ten to fifteen years for a case to be decided. The cost of litigation is often beyond the means of ordinary citizens. The dice is heavily loaded in favour of those litigants who can engage high powered legal brains to argue their case. Our system of criminal justice, settlement of property disputes, tax matters and labour disputes take an unusually long period. I am told the liquidation of a bankrupt company often takes 12 to 16 years. The land reform legislation has had limited impact both because of built in loopholes in legislation, absence of upto date land records and lack of requisite political will for effective implementation. We can no longer tolerate such gross distortions.

As a layman, I feel, we require two fold strategy to deal with this grave deficiency in our system of justice. We must rewrite our laws so as to plug loopholes and to minimise scope for disputes. Simultaneously, the administration of justice needs a major overhaul taking into account the technological advances which have proved to be powerful tools for speedy management decisions by business firms. I also feel that while judicial activism has come to stay, it must be refocused on the fundamental necessity to provide speedy justice. A time bound action programme ought to be devised to decide long pending cases before our courts. I know that the Hon'ble Chief Justice of India is seriously concerned about these issues. All of us have an obligation to strengthen his hands in this great national endeavour.

I would like to take this opportunity to draw your attention to a few issues concerning our international economic relations. Recent developments in the means of transport, communication and new information technologies have brought about profound changes in international trade, technology flows and capital movements. Internationally, both capital and technology are more mobile now than ever before. Also, with a progressive reduction in tariff and non tariff barriers through the GATT processes, barriers to the expansion of international trade have declined very substantially. These developments create fresh opportunities for developing countries to leap frog in the race for economic development. Countries of East Asia have taken full advantage of these opportunities but we have realised their immense potential only recently. We now seek to integrate our economy with the global economy but full benefits of integration require careful planning. We must create an environment and policy framework which would enable India to become a sufficiently attractive place for foreign capital and technology inflows. At the same time, we must ensure that foreign capital and technology supplement and do not supplant domestic resource mobilisation and development and indigenous research and development base. To derive optimal benefit from the emerging international economy, we must have first hand knowledge of promotional and regulatory systems prevailing in other countries, we must update our legal framework and administrative practices including dispute settlement mechanisms, with emphasis on transparency, speed, efficiency and fairness. This would also provide a fruitful agenda for action oriented research and members of the legal fraternity must actively take part in organising this research, particularly with regard to the comparative analysis of legal systems prevailing in other countries with which we have to compete for markets, technology and capital inflows. Special attention ought to be paid to legislation governing services and protection of intellectual property rights. As India integrates into the world economy, there will be immense new opportunities for professional services particularly for legal services. This would require significant upgradation of studies and research devoted to international trade law and laws regulating international flows of capital and technology.

Excerpts from the Report

by

N.R. Madhava Menon

Director,

National Law School of India University, Bangalore

National Law School is a living example of what legal education can achieve, given the co-operation and support of the legal profession, the judiciary and the general legal community. There are people within the University and outside who still wonder how such a beautiful campus could be developed and a reputation for quality education established within a short span of six years starting with almost nothing in terms of physical assets and funding. I would say that our basic asset continue to remain what it has been — a dedicated team of teachers who would not settle for anything short of quality, and a motivated set of bright young students who want to demonstrate that they are as talented as the best elsewhere in the world. The sponsors and promoters of the National Law School project felt that these are the assets which a centre for excellence would require and established the National Law School. Money flowed in slowly as performance improved steadily. Today everybody seems to be wanting a National Law School in every state and they are in a hurry thinking that if land and money are there, another National Law School or something of its like can come up. Pursuit of excellence in higher learning is a function of mind and soul, of an environment and of genuine concern. The experiment at the National Law School is still an experiment and is surviving because of a variety of favourable circumstances. Similar experiments if necessary, I submit, should be carefully planned before they can be put on the ground.

Two new postgraduate courses have been introduced, the type of which does not exist in any other law teaching institution in the country today. Recognizing the need for more trained teachers and researchers in law, the University introduced a four-year integrated LL.M./J.S.D. programme under which selected students who have aptitude for an academic career will be trained in inter-disciplinary teaching of law. Liberal scholarships are being offered to attract talented persons from all over the country for this career-oriented P.G. course. Another unique programme launched this year is a two-year degree course styled "Master of Business Law" (M.BL). This course is taught mainly through correspondence on the basis of prepared lessons and project assignments. It can be offered by any graduate of any discipline and is intended to give the basic legal information and skills necessary to understand the operation of business, commerce and industry under a globalising economy. The courses taught are law relating to contracts, commercial organisations, banking, insurance, international trade, taxation, labour, intellectual property and securities.

Our first batch graduated in July 1993 and have settled themselves in legal practice in different parts of the country. It was not necessary for the University to offer openings for them as they had selected their offices and had settled with the senior partners while they were in their placement training during study. This innovative learning programme called "placement training" for two months every year in different law offices have enabled a large number of our students not only to learn the niceties of legal practice but also to explore career options and settle for the best they are capable of. Integrated learning with emphasis on legal skills is what makes education different at the National Law School. It is now paying dividends by way of an expanding market for the graduating students the proof of which was the firstever-campus selection exercise attempted by top law firms of the country early this year. On repeated requests from senior advocates and established law firms, the Executive Council of the University permitted this year campus selection of outgoing graduates who are wanting to work on paid jobs in legal offices. Eight law firms from Delhi, Bombay, Calcutta and Bangalore sought people for over thirty positions from the 1994 graduates — an event unprecedented in the history of legal education in the country.

On finding that the High Court is not getting enough number of competent persons from among the Scheduled Caste Advocates to fill vacancies of Munsiffs in the State, the Government of Karnataka asked the National Law School to train these advocates and prepare them for judicial service examination. The Law School with some hesitation undertook the task and gave intensive coaching for four months on the relevant subjects to the twenty-five State-selected S.C. Advocates. Thirteen of them were presented for this year's examination of whom eight are reported to have finally received appointment orders from the High Court.

On the research front, the University is now engaged in a major agenda involving economic laws. Project LARGE is the acronym for "Legal Adjustments and Reforms for Globalising Economy." It aims to look at the legal regime in the context of the New Economic Policy and to suggest reforms in law and its administration. It is sponsored by the Union Ministry of Finance and funded by the UNDP. The University has opened an office of Project LARGE in Delhi and appointed a team of researchers under the supervision of a distinguished economist. An Advisory Committee of eminent lawyers and economists is guiding the research programme in which a good number of National Law School Faculty is intimately involved. Besides producing number of investigative reports, policy proposals and research publications, Project LARGE is expected to help improve the standard of teaching of economic laws in the University and elsewhere.

On the extension front, the University is continuing with a dynamic programme of legal services and community mobilisation for legal action and change. The Rural Mediation Project at Ramanagaram is being expanded and extended to another cluster of villages in Kengeri. The Legal Services Clinic at the City Civil Court Complex is put on firm basis with the appointment of a full-time co-ordinator, a panel of lawyers, and supporting staff. Student involvement in all these activities is being streamlined. The whole programme is now being integrated with the overall scheme of clinical legal education in the University. Para-legal training courses for social activists and continuing education courses for young advocates are now being undertaken at periodic intervals with additional funding support extended by some agencies.

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PRINCIPAL

ENROLMENT IN EDUCATI L INSTITUTIONS IN INDIA (2)

ENROLMENT BY STAGES (SCHEDULED CASTES) 1992-93

STATE/U.TS.	PRIMARY			MIDDLE			SEC./HR.SEC.			HR. EDUCATION*		
	BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL
1	2	3	4	5	6	7	8	9	10	11	12	13
Andhra Pradesh	880519	678971	1559490	245112	137595	382707	144446	60035	204481	23256	7439	30695
Arunachal Pradesh	67	32	99	2	1	3	6	2	8	0	0	0
Assam	250000	200000	450000	85000	70000	155000	40479	25988	66467	6242	2471	8713
Bihar	807120	340469	1147589	166135	48938	215073	64163	11338	75501	0	0	0
Goa	1854	1606	3460	714	500	1214	405	257	662	67	32	99
Gujarat	332957	254872	587829	117150	67569	184719	74005	37768	111773	19890	8880	28770
Haryana	223580	180682	404262	80564	44677	125241	51941	17023	68964	5784	743	6527
Himachal Pradesh	96900	81900	178800	42370	28900	71270	22520	11480	34000	1288	324	1612
Jammu & Kashmir	40985	29430	70415	17979	12883	30862	8101	3510	11611	830	345	1175
Karnataka	588321	467749	1056070	164815	104365	269180	127871	55067	182938	22240	6932	29172
Kerala	177685	167320	345005	109057	102881	211938	59329	64442	123771	4603	4492	9095
Madhya Pradesh	700661	475886	1176547	298860	83692	382552	103905	26512	130417	16418	2949	19367
Maharashtra	884005	740006	1624011	329399	215465	544864	249860	122720	372580	51542	17904	69446
Manipur	2179	2194	4373	664	611	1275	705	600	1305	270	214	484
Meghalaya	1243	1004	2247	563	381	944	673	352	1025	179	144	323
Mizoram	0	0	0	0	0	0	18	18	36	0	0	0
Nagaland	0	0	0	0	0	0	0	0	0	0	0	0
Orissa	440000	280000	720000	115000	70000	185000	61619	21278	82897	4777	1011	5788
Punjab	406662	324489	731151	123299	81174	204473	65506	37718	103224	6880	4780	11660
Rajasthan	556000	210008	766008	184000	37000	221000	126000	11000	137000	5066	299	5365
Sikkim	2339	2068	4407	430	391	821	227	172	399	0	0	0
Tamil Nadu	862307	714119	1576426	357036	261421	618457	181966	98714	280680	26546	13137	39683
Tripura	39580	33295	72875	13073	9227	22300	6680	3874	10554	780	303	1083
Uttar Pradesh	1693661	718171	2411832	574098	151874	725972	381355	66348	447703	53580	4091	57671
West Bengal	1189000	1021000	2210000	397000	362000	759000	120254	50844	171098	17364	7753	25117
A & N Islands	0	0	0	0	0	0	0	0	0	0	0	0
Chandigarh	7911	6471	14382	2963	2456	5419	1865	1609	3474	470	164	634
D & N Haveli	195	174	369	97	72	169	107	71	178	0	0	0
Daman & Diu	254	267	521	143	135	278	157	115	272	15	4	19
Delhi	119960	91090	211050	46346	33034	79380	32932	14408	47340	5286	3012	8298
Lakshadweep	0	0	0	0	0	0	0	0	0	0	0	0
Pondicherry	10801	11112	21913	6302	5796	12098	3198	2277	5475	491	248	739
INDIA	10316746	7034377	17351123	3478171	1933038	5411209	1930293	745540	2675833	273864	87671	361535

*Excludes enrolment in Ph.D/M.Phil and all professional courses except Engineering (B.E./B.Tech/B.Arch) and medicine (M.B.B.S) and Teacher Training (B.Ed./B.T.)

Source: Ministry of Human Resource Development. Annual Report 1993-94.

ENROLMENT RATIO OF STUDENTS BELONGING TO SCHEDULED CASTES 1992-93

STATE/UNION TERRITORY	CLASS I-V (6-11 YEARS)			CLASSES VI-VIII (11-14 YEARS)		
	BOYS	GIRLS	TOTAL	BOYS	GIRLS	TOTAL
1	2	3	4	5	6	7
Andhra Pradesh	162.74	128.92	146.05	79.85	45.76	62.98
Arunachal Pradesh	29.55	13.96	21.71	1.59	.81	1.21
Assam	245.87	207.30	227.09	145.54	127.10	136.59
Bihar	100.15	43.72	72.42	37.65	11.31	24.61
Goa	127.11	109.78	118.43	82.33	57.36	69.82
Gujarat	197.99	157.63	178.20	117.51	70.40	94.40
Haryana	110.82	94.32	102.79	66.63	40.70	54.29
Himachal Pradesh	133.28	112.61	122.95	99.25	68.21	83.79
Jammu & Kashmir	108.44	81.55	95.30	83.60	63.48	73.83
Karnataka	143.55	119.80	131.97	69.63	45.72	57.89
Kerala	112.66	109.74	111.22	118.12	114.98	116.58
Madhya Pradesh	121.63	88.78	105.80	92.26	27.57	60.96
Maharashtra	304.41	263.29	284.18	181.93	125.93	154.72
Manipur	137.47	148.83	142.94	78.77	74.72	76.78
Meghalaya	282.23	227.57	254.88	225.85	148.98	186.92
Mizoram	-	-	-	-	-	-
Nagaland	-	-	-	-	-	-
Orissa	162.93	109.57	136.99	74.26	46.81	60.78
Punjab	141.14	121.87	131.88	68.08	49.33	59.15
Rajasthan	102.37	40.85	72.46	62.70	13.38	38.78
Sikkim	126.42	114.28	120.42	42.12	40.61	41.39
Tamil Nadu	157.95	137.11	147.78	111.87	85.48	98.95
Tripura	170.53	146.61	158.70	100.76	74.60	87.99
Uttar Pradesh	85.85	40.27	64.21	52.63	15.51	35.07
West Bengal	140.65	125.59	133.27	83.01	77.31	80.19
A & N Islands	-	-	-	-	-	-
Chandigarh	119.13	107.67	113.68	76.63	73.97	75.40
D & N Haveli	89.71	88.06	88.92	77.00	62.02	69.82
Daman & Diu	-	-	-	-	-	-
Delhi	112.95	99.92	106.93	73.15	62.50	68.31
Lakshadweep	-	-	-	-	-	-
Pondicherry	179.54	188.21	183.83	172.75	161.72	167.28
INDIA	127.99	92.18	110.58	75.07	44.04	59.97

CAMPUS NEWS

New Campus for Ambedkar Open University

Inaugurating the new campus of the Dr B R Ambedkar Open University at Jubilee Hills, Hyderabad the Prime Minister, Mr. P.V. Narasimha Rao said the open universities have established their credentials by proving that education imparted by them was as good and effective as that of the regular ones in the country.

The Prime Minister said when the concept was introduced many educationists dismissed it as "a pipe dream and never considered it proper. However, I find their views fallacious as that myth is now exploded".

Mr. Rao said the education provided by open universities was not of inferior kind. "It's sophisticated and even more difficult to achieve when compared to the regular one", he observed. He said the open universities are cheaper alternatives as regular education involved lot of finances. He said at times he was baffled how learning could be imparted through several media and the gadgets and whether it was possible to learn at all. But he found that the distance education was not only effective but had established itself.

Mr Rao said Andhra Pradesh had achieved another first by starting the country's first open university in 1982. Earlier, too, it started junior colleges for the first time besides introducing several new schemes. The experience of the Dr B.R. Ambedkar Open University is valuable as far as organising other universities of this nature is considered and it can be considered as a pioneering institution by way of sharing experience and ideas.

While admiring the distance education as "a panacea to all problems of education at all levels in the country", Mr Rao reminded the academics of the drop-out rate in schools and the launching of adult education programme to overcome it. "My colleagues said adult education was nothing but a waste of money and now we have to prove them wrong", Mr Rao said.

Earlier, the Prime Minister unveiled the portrait of Dr Ambedkar and opened a pictorial exhibition depicting the growth of the university.

The Chief Minister, Mr Kotla Vijayabhaskara Reddy, urged the Prime Minister to allot a separate channel for distance education as its popularity was growing. He said the open university has opened a new chapter in education and it did not become a mere replica of correspondence courses.

With technology advancing at a rapid pace and making inroads into many areas, the mankind was poised for greater challenges and there was every need to revamp the existing education system to meet the needs of the future, the Chief Minister felt.

The Governor and Chancellor of the Dr B.R. Ambedkar Open University, Mr Krishan Kant, who released a commemorative souvenir on the occasion, lauded the progress of the university.

The University Grants Commission Chairman, Prof. G Ram Reddy, termed the Centre's decision to increase the allocation for education from 3.6 per cent to 6 per cent as a revolutionary step. Praising the all-round growth of the Ambedkar Open University, Prof. Ram Reddy said it was looked upon as a model institution in the country by other universities. Prof. Ram Reddy also released a research volume on Distance Education.

In his welcome address, the Vice Chancellor, Prof. S Bashiruddin, said the university catered to those who never had access to education. He appealed for a developmental assistance for the open university from the State as well as the Central Governments and hoped that all the 23 districts would have PG centres by the end of the eighth five year plan.

Workshop on Intellectual Property Rights

Inaugurating a two-day workshop on intellectual property, organised by the Patents Unit of the CSIR, New Delhi, at the Central Leather Research Institute (CLRI), Professor S.K. Joshi, Director General, Council of Scientific and Industrial Research, appealed to universities to make studies in intellectual property (comprising patents, designs, trade marks and copyright) as a compulsory part of the legal curriculum or evolve some other mechanism whereby this subject could attract a large number of students. At present, only a few universities offered studies in

Intellectual Property Rights (IPR) as an option and very few were attracted to it.

Mr. N.R. Subbaram, Adviser (Patents) to the CSIR, said a proposal would be made to the NCERT (National Council for Educational Research and Training, New Delhi) to evolve a syllabus for inclusion of IPR at the higher secondary school level, to create awareness of the potential and benefits of IPR in early years.

Dr. S. Ramachandran, Chairman of the Research Council of the CLRI and former Secretary to the Department of Biotechnology, said allegations that the impending changes in the patent regime would help multinationals dominate the economy might be exaggerated but this would become true if the Indian industry and research system did not learn how to make use of the IPR system to promote and protect indigenous innovation.

Dr. M.D. Nair, Vice-President of SPIC Pharma (India) Ltd, citing instances of latest pieces of legislation, court rulings and ongoing litigation in various countries, said both developed and developing countries who were members of GATT, besides China, were trying to 'bend the rules of the game' approved by GATT to protect their own interests. India should do the same without violating fundamental principles of GATT.

Scope for Research in Paediatrics

Dr. B.R. Rajan, Vice Chancellor of the Tamil Nadu Dr. MGR Medical University, called upon paediatricians to do research in their respective fields of specialisation instead of stopping with acquiring a post-graduate degree.

He was inaugurating the 19th annual conference of the Tamil Nadu unit of the Indian Academy of Paediatrics at Madurai. The Vice Chancellor regretted that over the last seven years the university was able to produce only a single D.Sc since the doctors were content to stop with a super speciality qualification.

Dr. Rajan said that one should not live in past glory and if the State were to show its potential to the world the paediatricians should take up research work. Though the State could boast of making rapid strides in bringing down the infant mortality rate or eradicating communicable diseases there were areas where there was rich scope for research. He pointed out that much needed to be done to prevent the rheumatic disease prevalent among children and malnutrition was another area that provided scope for research.

Dr. Sembon David, Director of Medical Education inaugurated the scientific session. Dr. M.G. Muthukumarasamy, Vice Chancellor, Annamalai University, Dr. T. Rajagopal, Professor of Paediatrics, Madurai Medical College, Dr. J. Rajappa, Dean, Madurai Medical College, Dr. K. A. Krishnamurthy and Dr. Gopal, past president, also spoke on the occasion.

Royalty for CSIR Scientists

The Council of Scientific and Industrial Research (CSIR) is reported to have decided to restore the system of sharing with scientists the earnings from royalties from licensing of technologies developed by CSIR laboratories. Under the guidelines evolved for the purpose, 40 per cent of the earnings would go to the inventor-scientists of the product/process concerned, 40 per cent to the laboratory concerned and the remaining 20 per cent to people other than the inventors who were associated with the project, said Prof. S.K. Joshi, Director-General of the CSIR.

The system of sharing of royalties with CSIR personnel had been discontinued in the late seventies and is now being revived as an incentive to innovation.

Prof Joshi said as many as 430 patents for products and processes evolved by the CSIR system were in force now. The average rate of commercialisation (putting into production by a licensee) of CSIR technologies was five per cent of the technologies developed by it, which in itself was a good enough record, he added.

Quality Management Centre

The Anna University proposes to establish a centre for quality management and a quality technology centre to improve quality awareness and consciousness among the people, according to the Vice Chancellor, Dr. M. Anandakrishnan.

Presiding over the third convention of quality circles of the Madras Chapter of the Quality Circle Forum of India (QCFI), the Vice Chancellor said the centre for quality management at the university campus would cater to the needs of those interested in gathering information on quality control. It would provide journals, books and video tapes pertaining to the subject. a quality technology centre would also be started at the Madras Institute of Technology, catering to calibration and other details.

Jamia Offers New Courses

Beginning this academic session, Jamia Millia Islamia has introduced a few new courses. The Faculty of Humanities and Languages will offer a one-year certificate course in Persian. The Faculty of Social Sciences has introduced a three-year bachelor's degree course in Business Studies. A student seking admission to the new course can opt for any of the following subjects : Foreign Trade Practices and Procedure, Advertising, Sales Promotion and Sales Management and Computer Application.

The Faculty of Natural Sciences has started a postgraduate diploma course in Computer Applications. This part-time course is self-financing and can be completed in one year and six months.

The Faculty of Education has introduced short-term and part-time courses in Fine Arts, Photography, Screen Printing, Commercial Art and Advertising, Batik and Pottery Craft, Water and Colour Painting and Miniature Art and Wash Painting. These courses will be of four months duration and will be offered twice in a year, from August to November and January to April.

The Faculty of Engineering and Technology is starting a four-year course in B.Sc Engineering, Electronics and Communication. It will also start a four-year part-time bachelors' course in Engineering in Electronics and Communication. Besides, a two-year postgraduate diploma course and a postgraduate course in Environmental Management. Students can also apply for a two-year *M.Sc in Electronics.*

Jamia Millia Islamia has also introduced reforms in admission procedure. According to the revised guidelines, a student seeking admission to any graduate or postgraduate courses must have at least 50% in the last examination. Besides, the candidate has to appear in a written test, followed by an interview.

Educational and Career Information

Universal Foundation for Training and Information, Secunderabad, a non-governmental voluntary organisation has developed a computerised Data Bank on Educational and Career Information gathered from the Indian universities, their affiliated colleges and institutions, both public and private, offering academic, professional and vocational courses. The information provided also includes I.T.Is and Polytechnics. A part of the information has also been telecast by the Doordarshan in the Countrywide Classroom Programme. The computerised information gives the details of "What to Study?" "Where to Study"? and "How to go about it?". A section is provided for school dropouts and housewives also. The information is continually up-dated. The information can be accessed at town, district, state and all India level to study at Certificate, Diploma, Graduate and Postgraduate levels. The information is divided into Part time, Full time and Correspondence (Distance Education).

The Foundation also plans to publish a book entitled "Educational and Career Information". This shall help a student to find out what course or career he can choose. Further details can be had from the Universal Foundation for Training and Information, Tirumala Complex, II Floor Sarojini Devi Road, Secunderabad-500 003.

Refresher Course in Public Relations

Makhanlal Chaturvedi National University of Journalism, Bhopal, organised a U.G.C. sponsored 3 week Refresher Course in Public Relations. Addressing the participants the Madhya Pradesh Governor Mr. Mohammad Shafi Qureshi said, flow of information and two-way communication was vital for the planned development of a democratic society It was imperative that the government and the public sector organisations should pay greater attention to this aspect and entrust the responsibility of public relations to trained people. He pointed out that meaningful and effective public relations' efforts have to be launched to make a success of the Technology Missions and the new Panchayati Raj.

Mr. Qureshi felt that there should be linkage between university courses in Public Relations and Communication and the Government/Industry. The government should make use of the professional graduates in bridging the communication gap between the government and the society. He asked the Makhanlal Chaturvedi Rashtriya Patrakarita Vishwavidyalaya to submit a proposal in this regard.

In all 22 lecturers from 16 universities of 11 states participated in the three-week course.

PG Course in Human Resource Development

The Continuing Education Department of Bhavnagar University, Bhavnagar has introduced a Master's degree course in Human Resource Development (MHRD) from the current academic session.

The course offers eight papers of 100 marks each in two academic years. The salient feature of the course is that it offers paper of dissertation and placement for further academic excellence. The papers offered are:

1. Concept & scope of HRD (Therory & Practice), 2. Planning of HRD, 3. Research Methodology for HRD, 4. Development of organisation Behaviour, 5. HRD for Quality of Life; 6. HRD in educational, rural, social and industrial organisations, 7. Non-formal system for HRD, and 8. Dissertation and Placement.

The minimum qualification for admission is a second class bachelor's degree in any discipline of any recognised university.

ISSR Comes of Age

Institute for Social Sciences and Research (ISSR), Vellore celebrated its 14th anniversary at a simple but impressive function. Dr. S.C. Mathivaanan, Director of ISSR gave the genesis of ISSR and described its development from a one room Institution to the present 55 acre campus with all modern academic facilities to the professional students. He recalled the days in 1981 when he was the only teacher handling the classes which strength has grown today to 15 full-time teachers, 5 part-time teachers and 15 visiting faculty from academic and Industries.

He was satisfied about the growth of the Institute, run all the years independently without affiliation of a university or recognition of the educational bodies. As a non-university institution, it has designed programmes on its own to meet the social needs of the industrial society.

A three-member team of the AICTE has recently visited the Institute to assess its facilities in order to accord approval to its PG program in Business Administration.

New Research Projects for MSU Baroda

Indian National Committee on Irrigation and Drainage (Constituted by the Ministry of Water Resources, Govt. of India) has sanctioned the following two Research Projects to Water Resources Engineering & Management Institute (WREMI), M.S. University of Baroda :

(1) "Determination of optimal cropping pattern and release policy for a conjunctive use of surface and groundwater by linear programming" with a total grant of Rs. 2.94 lakhs for 3 years.

(2) "Development of simulation model for dynamic regulation of canal networks" with a total grant of Rs. 3.25 lakhs.

Department of Atomic Energy, Government of India has sanctioned a Research Project entitled "Colour enhancement of Topaz and Beryl varieties of India by irradiation and heating" with a total grant of Rs. 2,99, 340.00 for 3 years to the Department of Geology, Faculty of Science.

Nepal Prince Visits JNU

Nepal Crown Prince Dipendra Bir Bikram Shah Dev, who has been on a state visit to India, visited the Jawaharlal Nehru University and evinced keen interest in geographical information system being developed by the university.

The Prince met the Deans of various schools of the university and was briefed about the research works going on in the university. Being a student of geography, he showed a keen interest in the research works being done in the Centre for the Studies of Regional Development of the university and emphasised the need for collaboration between the JNU and the Nepal University in various research works.

Later, the Prince met the teachers of the School of International Studies and appreciated the work being done on Nepal.

The Indian Ambassador to Nepal, Mr Bimal Prasad, who was earlier a teacher in the JNU, accompanied the Prince to the University.

News from UGC

Countrywide Classroom Programme

Between 15th September to 21st September, 1994, the following schedule of telecast on higher education through INSAT-ID under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 1.00 p.m. to 2.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

6.00 a.m. to 7.00 a.m.

15.9.94

"Electronics – The Hope and the Future"

"Fathomless Folklore"

"The Literary Biography"

17.9.94

"Understanding Solar Activity – Part I"

"Harvest"

"A Tour of the Library of Congress"

18.9.94

"Journey of Tea : From Plucking to Packing"

"Hypertension – A Silent Killer"

"The Week Ahead"

20.9.94

"Question Time"

"Understanding Architecture – Part II : The Meaningful Mosaic"

IInd Transmission

1.00 p.m. to 2.00 p.m.

15.9.94

"Water Pollution Control : Environmental Engineering – Part IV A"

"George Abraham Grierson"

"Paninian Linguistics – Part III"

16.9.94

"The Guitar Odyssey"

"Career Counselling : Performing Arts"

17.9.94

"Career Fair ' 93"

"Le Metro"

"The Week Ahead"

18.9.94

No Telecast

19.9.94

"Question Time"

"The Physics of Music – The Magic Flute"

20.9.94

"Overhead Projector"

"Modes of Narrative – Part I"

"Revolution in Orthopaedics – Part III : Trauma Accidents – A Silent Killer Disease"

21.9.94

"Low Cost Equipment for Plant Protection"

"Continental Drift"

"Fuel for Life – Part II"

Hindi Telecast

प्रात: 6.00 से 6.30 बजे तक

16.9.94

"समझ सिनेमा की – भाग 10"

"छात्रों के लिए प्रसारण माध्यम"

19.9.94

"तकनीकी शिक्षा और हिन्दी माध्यम"

21.9.94

"हिन्दुस्तानी संगीत की यात्रा – III"

"पैसे का विकास"

Subject Panel in Indian Languages

The University Grants Commission, (UGC) has reconstituted the National Subject Panel in Indian Languages with Padmashri Professor Laxmi Narayan Dubey, UGC Professor Emeritus (Hindi) of Doctor Harisingh Gour University, Sagar as the Convenor.

The other members of the panel are Prof. (Mrs.) Kanika Tomar, Visva Bharati Shantiniketan (Hindi); Prof. G. Gopinathan of Calicut University (Hindi); Dr. Bhimsen 'Nirmal' Osmania University, (Hindi); Prof. Atiq A. Siddiqui of Aligarh Muslim University (Urdu); Prof. Gurucharan Singh Arshi of Punjabi University (Punjabi); Prof. Vishwanath Reddy of Dr. B.R. Ambedkar Open University, (Telugu); Dr. Prabhu Desai of Nagpur University (Marathi); Prof. C.P. Achuthananny of Calicut University (Malayalam); Prof. Nityanand Satapathy of Utkal University (Oriya); and Prof. Kodendaraman of Madras University (Tamil).

The members shall hold office for 2 years beginning 1st June, 1994 with the following terms of reference :

1. To advise on measures for enhancing the quality of work in teaching and research and make recommendations in this connection to the Commission.

2. To prepare periodically status reports regarding research facilities, research areas, performance and perspectives and indicate areas of thrust and importance and suggest measures to improve quality.

3. To render advice on such other matters as may be referred to them by the Commission.

4. During the selection of the departments under SAP/COSIST and major research projects, at least one member from the panel may be associated.

5. The Panel may suggest modifications in the existing UGC guidelines for various schemes from time to time and also communicate other proposals of innovative nature to the Commission.

6. The panel may also identify from time to time the areas of thrust/priority for SAP/Major Research Projects and recommend to the Commission measures for their development. The Panel does not have to identify the institutions and individuals for such awards.

News from Abroad

Aspirin and Ageing

Scientists have found that aspirin prevents the ageing of a protein in the cornea of the human eye. The finding adds to a mosaic of evidence that researchers are building that aspirin may have a role in preventing some of the pathology of diabetes and Alzheimer's disease, and ageing in general.

Keith Meek and Nageena Malik of the Open University's Oxford Research Unit have been experimenting with human cornea in a test tube. Cornea contains collagen, a protein that is common around the body. As it gets older, collagen forms cross-links which cause it to stiffen and age. The scientists have found that adding sugar to the cornea makes the cross-linking, and therefore the ageing, happen more quickly. But adding aspirin beforehand prevents the sugar's effect.

The sugar works by attaching itself to parts of collagen molecules and pushing them apart, which increases the stiffness of the tissue. But if the aspirin can get there beforehand it deposits part of itself — an acetyl group — on the collagen which the sugar cannot then shift. The scientists found a similar preventative effect with vitamins C and E.

There has been a lot of interest in the effect of sugar on ageing because the tissues of diabetics, who find it difficult to control their sugar levels, age more quickly than non-diabetics, leading to organ damage.

Studies at the Oxford University ophthalmology department have suggested that aspirin can delay the onset of cataracts in diabetics. John Harding, university research lecturer, said that an association had been found between taking an average of one tablet per day and delayed the onset of cataracts. But he said that a clinical trial was needed before a causative link could be proved.

Other scientists are postulating that sugars may cause some of the brain changes found in Alzheimer's disease. Dr Harding said that scientists have recently found an excess of proteins with sugars attached to them in the brains of sufferers.

Aspirin's ability to acetylate other molecules is responsible for its effects in thinning the blood and killing pain.

Degrees Offered Through PBS Telecourse Program

Sixty community colleges have joined with 22 public television stations in America to offer associate of arts degrees through distance learning telecourses. The program, "Going the Distance," is the centerpiece of a new Public Broadcasting Service (PBS) initiative called "Ready to Earn," which is aimed at expanding career opportunities for working Americans and increasing work force competitiveness through adult education services. The initiative is targeted at the national education goal that states that "every adult American [should] be literate and possess the knowledge and skills necessary to compete in a global economy...."

16806

Students wishing to earn degrees will study via telecourses that utilize video programs distributed through broadcast or tape, textbooks, and study guides. All courses will be led by instructors, who will establish course requirements and evaluate and work with students. The students will pay tuition to the community colleges which will award credits and degrees.

PBS's Adult Learning Service has offered telecourses through public broadcasting stations and local colleges since 1981, but the students were unable to use them to fulfil degree requirements. Enrolment in telecourses has grown from 55,000 in 1981 to nearly 350,000 last year.

Additional services PBS may offer through the Ready to Earn initiative include other college programs, career and job information for adults, and multimedia occupation demonstrations.

Cooperation in Sports Training

Mr Mukul Wasnik, Minister for Youth Affairs and Sport visited the Australian Institute of Sport (AIS) in Canberra recently to discuss the possibilities for cooperation between India and Australia in the training of elite athlete met the Executive Director of the Australian Sports Commission, Mr Jim Ferguson, and senior sports administrators, coaches, athletes and sports scientists. He toured the AIS complex, which includes international sporting facilities located alongside a world class sports science and sports medicine facility and a residential area for over 350 residents and visiting athletes.

Mr Ferguson is expected to visit India later this year for further talks on improving relations between the Australian Sports Commission and the Sports Authority of India.

BOOK REVIEW

Excellent Publication

P.B. Tripathi*

K.V. Rajan. Computers in Chemistry. New Delhi, Tata McGraw Hill, 1993. Pp. xv, 596. Rs. 276/-.

The role of computers in all areas of studies and research cannot be over-emphasised. Computers have now been used in a wide variety of activities. Simple use could be for keeping household accounts and the more complex ones are interfacing the same with various medical diagnostic tools as well as life saving devices, navigation of simple aircraft to complex satellite and a whole lot of other uses. Computer literacy and use have now become essential for frontline research and analysis.

The book "Computers in Chemistry" is perhaps the first of its kind to be published in India to make the Chemists familiar with computer languages which can help them in solving a variety of problems, through algorithmic approach.

The author has begun the book with a chapter explaining the functions and use of various hardware used for computation, the types of computers like microcomputers, mini computers, mainframe system and supercomputers and their capabilities. He has also taken pains to explain what is machine level language and assembly level languages. There is detailed description about the basic concepts involved in programming a computer by using Basic, Fortran, Pascal, and C-languages and how different problems of chemistry could be solved by applying one or other of these languages.

While explaining the principles of different programmes, the author has judiciously chosen excellent examples which can be tried by the learner easily and will arouse his excitement as well as confidence in using computers for solving different kinds of problems. There are also exercises after each chapter, so that a learner can find for himself/herself how much he/she has comprehended. For teachers and advanced level students the author has given adequate references for further studies.

The book will not only be useful for the students and teachers of Chemistry but also for those who are attempting to develop software packages in Chemistry. However, a brief description about the 'Chem' software packages which are now available commercially would have been useful.

On the whole, the book is an excellent publication and will be of immense use to both advance level students and teachers and researchers in chemistry.

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RESEARCH IN PROGRESS

A list of research scholars registered for doctoral degrees in Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Agrawal, Smita. **Coding and information theory.** Kerala. Dr V Sathyabhama, Prof, Department of Mathematics, University of Kerala, Kariavattom.

2. Bright, V S. **Approximation theory.** Kerala. Dr C Jayasri, Reader, Department of Mathematics, University of Kerala, Kariavattom.

3. Sasikumar, K. **Graph theory and combinatories.** Kerala. Dr M I Jinnah, Department of Mathematics, University of Kerala, Kariavattom.

Physics

1. Chandar Shekar, B. **Luminescence of modified oxide phosphors.** HS Gour. Prof R Nath, Department of Physics, Dr Harisingh Gour Vishwavidyalaya, Sagar.

2. Issac, Christina George. **Infrared, Raman and surface enhanced Raman scattering spectra of certain compounds.** Kerala. Dr G Aruldhas, A-76, Sharon, Kanaka Nagar, Kowdiar, Thiruvananthapuram.

3. Joseph, Benny. **Conducting films.** Kerala. Dr V K Vaidyan, Prof, Department of Physics, University of Kerala, Kariavattom.

4. More, Babasaheb Manik. **Studies on (CDS) x (Pbs) 1-x thin film composites for photoelectrochemical applications.** Shivaji. Dr L P Deshmukh, Department of Physics, Shivaji University, Solapur.

Chemistry

1. Chourasia, Rajesh. **Silver ion catalysed oxidation of some dyes by peroxide sulphate ion.** HS Gour. Dr G L Agrawal, Department of Chemistry, Dr Harisingh Gour Vishwavidyalaya, Sagar.

2. Singh, Vinod Kumar. **Ab initio calculation of isotropic.** BHU. Prof P Chandra, Department of Chemistry, Banaras Hindu University, Varanasi.

Earth Sciences

1. Arya, Ritesh. **Biostratigraphic correlation, palaeoenvironmental reconstruction and palaeontological studies of Kasauli formation, lesser Himalayas, Himachal Pradesh.** Panjab. Prof Ashok Sahni, Department of Geology, Panjab University, Chandigarh.

2. Jassal, Harcharan Singh. **Soils of Bist Doab area, Punjab (India) : A sedimentological and geochemical approach to their genesis.** Panjab. Dr G S Gill, Department of Geology, Panjab University, Chandigarh.

3. Narayanan, V. **A study on the evolutionary history of the tertiary basin of Kerala.** Kerala. Dr S Anirudhan, Department of Geology, University of Kerala, Kariavattom.

Engineering & Technology

1. Srivastava, Jitendra Kumar. **Studies on fermentation of paper mill waste.** Vikram. Dr S K Chandrakar, Reader, Department of Chemical Engineering, Govt Engineering College, Ujjain.

BIOLOGICAL SCIENCES

Marine Sciences

1. Ajith Kumar, K G. **Studies on the fresh water algae in rock pools of Southern Kerala.** Kerala. Dr V Sobha, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

2. Deepa, C U. **Ecology and phytochemical constituents of marine plants.** Kerala. Dr K Padma Kumar, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

3. Santhosh, B. **Parasites and diseases of mullets of Kerala coast.** Kerala. Dr S Radhakrishnan, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

4. Suresh, B. **Studies on the fresh water algae in temple ponds of south Kerala.** Kerala. Dr V Sobha, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

5. Vardhanan, Shibu, Y. **Some studies of the impact of certain selected toxic materials on aquatic organisms.** Kerala. Dr Tresa V Fernandez, Lecturer, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram.

Biochemistry

1. Amin, S. **Preparation, characterization and unfolding of duck *Anas domestica* ovomucoid.** Kashmir. Dr Baig, Department of Biochemistry, University of Kashmir, Srinagar.

2. Chrungoo, V J. **Biochemical studies on the use of mammalian cell culture for the assessment of hepatoprotective agents.** Kashmir. Dr Baig, Department of Biochemistry, University of Kashmir, Srinagar.

3. Ganai, B A. **Sulfite oxidase from *Malva sylvestris*.** Kashmir. Dr Baig and Dr Akbar Masood, Department of Biochemistry, University of Kashmir, Srinagar.

4. Malik, V B T. **Studies on the role of monosodium L-glutamate (MSG) as a hyperlipidemia inducer in certain tissues of adult mice.** Panjab. Dr (Mrs) P Ahluwalia, Department of Biochemistry, Panjab University, Chandigarh.

5. Nelson Babu, M. **Biological effect of filarial materials in hosts.** Kerala. Dr R Kaleysa Raj, Prof, Department of Biochemistry, University of Kerala, Kariavattom.

Zoology

1. Geed, Sangeeta. **Role of an indigenous drug against**

mercury induced histo-enzymological changes in a fresh water cat-fish, *Heteropneustes fossilis* Bloch. Vikram. Dr S C Kothari, Reader, Vikram University, Ujjain.

2. Pandey, Anil Kumar. **Hydrobiological studies on Gambhir Dam, Ujjain (MP) including up and down stream with special reference to fisheries.** Vikram. Dr Sharad Shrivastava, Reader, Vikram University, Ujjain.

3. Pawar, Pushpa Vijay. **Effect of selected insect growth regulators on mosquitoes.** Shivaji. Dr R N Sharma, National Chemical Laboratory (CSIR), Pune.

4. Shrivastava, Sudha. **Effect of micronutrients on the quality of seed cocoons in multivoltine races of silkworms, *Bombyx mori*.** Vikram. Dr A P Saxena, Prof and Head, Vikram University, Ujjain.

5. Siddiqui, Ayaz Ahmed. **Ecological studies on Cladocera and Ostracode (Crystacea) of western zone of Narmada River with relation to fish feeding.** Vikram. Dr K S Rao, Reader, Vikram University, Ujjain.

6. Tare, Vrushali Shirish. **Bioactivity of some plant oils and their common constituents on selected insect pest/vectors.** Shivaji. Dr R N Sharma, National Chemical Laboratory, (CSIR), Pune.

7. Thilak, Jayashree. **Studies on heavy metal accumulation in Gandhi Sagar Reservoir, Mandsaur District (MP) with special reference to some food fishes.** Vikram. Dr Sharad Shrivastava, Reader, Vikram University, Ujjain.

8. Vartak, Prakash Hari. **An investigation into some possibilities of pest management by insect behaviour manipulation.** Shivaji. Dr R N Sharma, National Chemical Laboratory, Pune.

Medical Sciences

1. Kandle, Suresh Kallappa. **Immunochemical studies in cancer.** Shivaji. Dr V L Jahagirdar, Dr V M Medical College, Solapur.

2. Lingayat, Chandrashekar Pundlik. **Purification of bhallatak with reference to bhallatakawaleha.** Shivaji. Dr S R Joshi, Joshi Hospital, 46, Shivaji Nagar, Sangli.

3. Ojha, Raju. **Study of high risk behaviour in AIDS.** BHU. Dr S C Mahapatra, Department of Preventive and Social Medicine, Banaras Hindu University, Varanasi.

4. Roy, Subhra. **Impact of smokeless Chullah in the prevention of diseases and environment.** BHU. Prof J Tandon, Department of Preventive and Social Medicine, Banaras Hindu University, Varanasi.

5. Singh, Minakshi. **Some action research in maternal and child health.** BHU. Dr S C Mahapatra, Department of Preventive and Social Medicine, Banaras Hindu University, Varanasi.

6. Wali, Ashok Gurlingappa. **Ayurvedokta updhatu va tyanchya chikitsechya sandarbhat vichar.** Shivaji. Dr D R Bhakare, Principal, Ayurvedic Mahavidyalaya, Kolhapur.

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

Physical Sciences

MATHEMATICS

1. Bansal, Sanjeev Kumar. **An analytical treatment of linear and non-linear waves in ducts.** Jamia. Prof Aruna Kapoor, Department of Mathematics, Jamia Millia Islamia, Delhi.

2. Bej, Naba Kumar. **Studies on the effects of non-homogeneity in different elastic and plastic materials.** Burdwan. Dr A K Mukherjee, Vivekanand College, University of Burdwan, Burdwan.

3. Bera, Mousumi. **Mathematical and numerical modelling of sound propagation attenuation inside rectangular ducts.** Jamia. Prof (Mrs) Aruna Kapoor, Department of Mathematics, Jamia Millia Islamia, Delhi.

4. Chakraborti, Gargi. **Application of functional analysis in certain class of optimal control problems.** Burdwan. Dr R N Mukherjee, Department of Mathematics, University of Burdwan, Burdwan.

5. Chikkla, Roghu. **Studies on topological structures and fixed point of mappings over them.** Burdwan. Prof A P Baisnab, Department of Mathematics, University of Burdwan, Burdwan.

6. Das, Apurba Narayan. **Some boundary value problems in linear elastodynamics.** North Bengal.

7. Jaker Ali. **Pettis integration and analytic weak radon-nekodyn property.** Burdwan. Prof N D Chakraborty, Department of Mathematics, University of Burdwan, Burdwan.

8. Khan, Akhtar Ali. **On the regularization of some incompletely posed variational inequalities.** Jamia. Dr Khalik Ahmad, Department of Mathematics, Jamia Millia Islamia, Delhi.

9. Mishra, Shailendra Kumar. **Sequence spaces and related topics.** IIT Delhi. Prof B Choudhary, Department of Mathematics, Indian Institute of Technology, Delhi.

10. Nirbhay Kumar. **Theoretical and numerical analysis of sound propagation inside ducts with splinters.** Jamia. Prof Aruna Kapoor, Department of Mathematics, Jamia Millia Islamia, Delhi.

11. Pant, Neeraj. **Some spherical fluid models in general relativity.** Kumaun. Dr D N Pant.

12. Raj Kumar. **Static deformation of a multilayered elastic medium coupling in different ways to a base due to two-dimensional sources.** Dayanand.

13. Rakesh Kumar. **On magnetohydrodynamic, thermal and thermohaline convection problems.** HP.

14. Ramayyan, A. **Contributions to the study of differential and difference equations and nonoscillatory sequences and functions over hardy fields.** Madras. Dr D Somasundaram.

15. Shankar Bhat, K. **Probabilistic analysis of complex repairable systems.** Madras. Dr M Gururajan.

16. Sharma, Avadhesh Chandra. **Stability problems in certain plasma configurations.** Roorkee.

17. Sharma, Savita. **Some characterization theorems in hydrodynamic and hydromagnetic stability.** HP.

18. Srivastava, Aishvarya. **Finite element approach to ecological problems with special relevance to environmental pollution and population growth.** Jiwaji. Dr V P Saxena, Prof and Head, Department of Mathematics, Jiwaji University, Gwalior.

19. Sunil. **Plasma and fluid instabilities.** HP.

20. Virmani, Vatsla. **An alternative approach to some classical queueing problems.** IIT Delhi. Prof O P Sharma, Department of Mathematics, Indian Institute of Technology, Delhi.

PHYSICS

1. Agrawal, Harish Chandra. **Defect distribution and microhardness of mixed alkali halide crystals.** Jiwaji. Dr A K Srivastava, Department of Physics, Jiwaji University, Gwalior.

2. Aren, Girish. **Preparation and characterization of CuIn(Se$_{1-x}$S$_x$)$_2$ thin films.** IIT Delhi. Prof O P Agnihotri, Department of Physics and Dr V D Vankar, Centre for Materials Science Technology, Indian Institute of Technology, Delhi.

3. Awana, V P S. **Synthesis and characterization of La-214 and Bi-2122 high temperature superconductors.** Delhi.

4. Borah, Bikash Kumar. **A study of determination on quark masses and developing a mass formula for the hadrons.** Dibrugarh. Dr P Mahanta, Prof, Department of Physics, University of Delhi, Delhi.

5. Dutta, Prasanta Kumar. **Experimental characterization of some uniaxial and biaxial crystals for non-linear laser devices.** Burdwan. Dr Gopal Chandra Bhar, Department of Physics, University of Delhi, Delhi.

6. Gokulamurali, N. **Fast ionic conductors : Transport and thermal studies on some silver oxysalts doped with CuI.** Madras. Dr P Maruthamuthu and Dr S Austin Suthanthiraraj.

7. Gopi Krishna, S. **Studies on light diffraction by H F and V H F ultrasonics.** Osmania.

8. Goswami, Gautam. **Some aspects of quantum field theory and spin systems.** Calcutta.

9. Gujral, Seema. **Some studies on unijunction transistor with special reference to the effects of magnetic fields, frequencies and switching applications.** Durgawati.

10. Gupta, Manju. **Characterization of thin films of amorphous silicon nitride prepared by plasma enhanced chemical vapour deposition technique.** IIT Delhi. Prof O P Agnihotri and Prof H K Sehgal, Department of Physics, Indian Institute of Delhi, Delhi.

11. Irusan, T. **Studies on the growth and characterisation of some urinary crystals grown in gel.** Anna.

12. Joshi, Sanjay Harishankar. **Growth and photoelectrochemical characterization of CuInSe$_2$ thin films and WSSe single crystals.** Patel. Prof M K Agarwal.

13. Khan, Sajid Nawaz. **Relative intensity of triple plasmon satellite in X-ray emission spectra.** Kumaun. Dr S P Singh.

14. Middya, Abdul Rafik. **Amorphous silicon germanium alloy : Preparation of improved quality film, its characterization and device application.** Calcutta.

15. Muraleedharan Nair, K G. **A study of low energy helium and argon ion implantation in concentrated aluminium-manganese alloys.** Madras. Dr Kanwar Krishan.

16. Murti, V V S. **A study of some aspects of solar thermal storage systems using phase change materials:** Vikram. Dr S C Bhand.

17. Murugakoothan, P. **Growth and characterization of superconducting bulk textured materials and single crystals.** Anna.

18. Narsinga Rao, C. **Synthesis, characterization and magnetic properties of single doped (Pb and V) and double doped (Pb, W and Pb, Mo) Bi(2223) high temperature superconductors.** Osmania.

19. Pant, Kamal Kumar. **High power coherent emissions from relativistic beams.** IIT Delhi. Prof V K Tripathi, Department of Physics, Indian Institute of Technology, Delhi.

20. Ramachandra Raja, C. **Growth and characterisation of beta barium borate and potassium pentaborate single crystals.** Anna.

21. Rath, Shyama. **Resonant Raman and infrared spectroscopy of mercury cadmium telluride.** IIT Delhi. Prof S C Abbi, Department of Physics, Indian Institute of Technology, Delhi.

22. Sarma, Khanindra Kumar. **A study on plasma maser theory for a turbulent plasma.** Gauhati. Dr S N Sarma, Department of Physics, M C College, Barpeta and Prof U N Das, Head, Department of Mathematics, Gauhati University, Guwahati.

23. Shaik Zameeruddin. **Spectroscopic studies on four and six co-ordinate divalent metallic complexes using copper (II) as magnetic probe.** Osmania.

24. Shukla, Ram. **Critical current studies in bulk and metal-clad high-Tc superconductors.** IIT Delhi. Prof D K Pandya, Department of Physics, Indian Institute of Technology, Delhi and Dr R G Sharma, Division of Cryogenics, National Physical Laboratory, New Delhi.

25. Srinivas, Gandikota. **Structural, optical and electrical properties of molybdenum silicide thin films.** IIT Delhi. Dr V D Vankar, Department of Physics, Indian Institute of Technology, Delhi.

26. Sripathi, Yarasi. **Study of structural and optical properties of GaGeTe and SiSe thin films and their crystallization behaviour on laser and thermal annealing.** IIT Delhi. Prof L K Malhotra and Dr G B Reddy, Department of Physics, Indian Institute of Technology, Delhi.

27. Srivastava, Nandita. **Dynamic phenomena on the sun.** Ravishankar. Dr Arvind Bhatnagar, Director, Udaipur Solar Observatory, Udaipur.

28. Verma, Prabhat. **Temperature dependent Raman studies of ion-implanted and pulse laser annealed gallium arsenide.** IIT Delhi. Prof S C Abbi, Department of Physics, Indian Institute of Technology, Delhi.

29. Vipan Kumar. **Characterization of Hg-sensitized photochemical vapour deposited silicon oxide and silicon oxynitride thin films.** IIT Delhi. Prof O P Agnihotri and Dr V D Vankar, Department of Physics, Indian Institute of Technology, Delhi and Dr K S Chari, Microelectronics Division, Electroniki Niketan, 6 CGO Complex, Lodi Road, New Delhi.

CHEMISTRY

1. Agra, Fathi Mohd Amin Mohd. **Synthesis and structural studies of group IV metal complexes.** AMU. Prof A Aziz Khan.

2. Ahmed Naseeruddin. **A kinetic and mechanistic study of some oxidation reactions by peroxomono sulphate.** Osmania.

3. Anand, V. **Synthesis of some 1,2-fused aza heterocycles on 4(1H)quinazolinones : Condensation of 1,3-Diamines with carbonyl compounds and its derivatives.** Osmania.

4. Bandyopadhyay, Asok Kumar. **Chemical investigation of Indian plants.** Burdwan. Dr S Thakur, Department of Chemistry, University of Burdwan, Burdwan.

5. Bhatt, Ajoykumar Murlidhar. **Studies on improvement in quality of solar salt produced from sea water and inland brines.** Bhavnagar. Dr M P Bhatt, Scientist (Retd), Central Salt and Marine Chemicals Research Institute, Bhavnagar.

6. Chandrasekharam, M. **Synthetic studies on polarised ketene N, S-,O,S-and S,S-acetals : Deprotection of dithioacetals and 1,3-dithianes with dimethylsulfoxide.** NEHU. Prof (Mrs) H Ila, Department of Chemistry, North Eastern Hill University, Shillong.

7. Gupta, Seema. **Synthesis and electrochemical studies on some derivatives of sulphonamides with special reference to the effect of surfactants.** Jiwaji. Dr Rajeev Jain, Reader, Department of Chemistry, Jiwaji University, Gwalior.

8. Hari, N. **Theoretical and experimental studies in nuclear magnetic resonance spectroscopy.** Osmania.

9. Jayakar, Anitha Rachel. **Preparation, characterization of supported copper catalysts and their activity in the reaction of cyclohexanol.** Osmania.

10. Jhansi Laxmi, P. **Reaction kinetics and mechanism in micellar media.** Osmania.

11. Kanwar, Sanjiv Raj Singh. **Oligofurosianosides of yucca, *Gloriosa* linn leaves and synthesis of some pheromones.** HP.

12. Maleque, Abdul. **Study of complex equilibria of some hydrazone schiff bases with some metal ions in mixed-aqueous solvent.** Burdwan. Dr A K Choudhury, Department of Chemistry, University of Burdwan, Burdwan.

13. Nagarkoti, Sangita. **Tellurium (IV) tin (IV) and methyl substituted tin (IV) derivatives of some N-[O]-hydroxy substituted (ORH) benzyl alanines.** Kumaun. Dr M Chandra.

14. Narasimha Rao, U. **Synthesis and characterization of novel monomers and polyamides/imides containing styryl pyridine moiety as potential nonlinear optical materials.** Osmania.

15. Padmaja, Paladugu. **Electrochemical studies on some biologically important organic compounds.** Jiwaji. Dr R Jain, Reader, Department of Chemistry, Jiwaji University, Gwalior.

16. Panchanan, Subrata. **Studies on coordination compounds of dioxouranium (VI) and molybdenum with ligands derived from amino acids (especially with imidazole, amine and amide R groups).** North Bengal.

17. Panesar, Kawaljeet Singh. **Studies on liquid-liquid extraction and reversed phase chromatographic behaviour of some transition metal ions using high molecular weight amines and organophosphines.** Roorkee.

18. Panwar, Ashok. **Preparation of tetrahydroaccetate (iii) ion and study of its reactions with certain aromatic amines.** Roorkee.

19. Patel, Dineshchandra Khodidas. **Polymaleimides having ion-exchangeable groups.** Patel. Dr J S Parmar.

20. Pathak, Sandeep. **Chemical studies on some species of Umbelliferae and Compositae.** Kumaun. Dr C S Mathela.

21. Pelley, Malabika. **Studies on the chemistry of some natural products.** Calcutta.

22. Rajendran, C. **Studies in the chemistry of natural products.** Madras. Dr P S Subramanian.

23. Rama Devi, T. **Synthesis of some biologically active compounds.** Osmania.

24. Sangeeta. **Heterocyclic compounds : Synthesis of some substituted chromones of potential medicinal interest.** Kurukshetra.

25. Sangha, Parveen Kaur. **Synthesis, characterisation and catalytic behaviour of vanadium complexes.** Jiwaji. Dr D D

Agarwal, Department of Chemistry, Jiwaji University, Gwalior.

26. Sarkar, Biplab. **Aspects of sequential approximations of chemical theories.** Burdwan. Dr K Bhattacharyya, Department of Chemistry, University of Burdwan, Burdwan.

27. Shah, Hitesh Pravinchandra. **Studies on drug potentials.** Bhavnagar. Dr N K Undavia, Reader, Department of Chemistry, Bhavnagar University, Bhavnagar.

28. Sharma, B M. **Studies on some natural and synthetic drugs.** Saurashtra. Dr A J Baxi.

29. Sharma, Monika. **Analytical studies of III-A and V-A group elements.** Ravishankar. Dr K S Patel, Lecturer, School of Studies in Chemistry, Pt Ravishankar Shukla University, Raipur.

30. Sherly, K B. **Electron donating properties and catalytic activity of rare earth oxides.** Cochin. Dr S Sugunan, Prof, Department of Applied Chemistry, Cochin University of Science and Technology, Kochi.

31. Shobha Rani, S. **Regio and enantio selective organic transformations by montmorillonite supported transition metal catalysts.** Osmania.

32. Singh, Harsh Vardhan. **Epoxidation of unsaturated compounds using transition metal complexes as catalyst.** Roorkee.

33. Singh, Sanjay Kumar. **Synthesis of optically pure amino acids, pyrazo and isoxazoles and phytochemical studies on Indian medicinal plants.** Delhi.

34. Singh, Shashi. **Synthesis, characterization and biological activity of transition metal complexes of some novel substituted biguanides.** HAU.

35. Srivastava, Sandeep. **Analytical applications of chelating ion exchangers.** IIT Delhi Prof G N Rao, Department of Chemistry, Indian Institute of Technology, Delhi.

36. Srivastava, Seema. **Electrochemical studies on newly synthesised organic compounds of biological importance.** Jiwaji. Dr R Jain, Reader, Department of Chemistry, Jiwaji University, Gwalior.

37. Varghese, Francis V. **Studies on the physicochemical and surface properties of activated charcoal cloth.** IIT Delhi. Prof N K Sandle, Department of Chemistry, Indian Institute of Technology, Delhi.

38. Varma, Alka. **Amino acid sequencing of aracnin subunit and study of structural class of aracnin.** Roorkee.

39. Yadav, Suneet Kumar. **Liquid -liquid extraction and reversed phase chromatographic studies of some 2-3d metal ions using alkylphosphorous extractants.** Roorkee.

EARTH SCIENCES

1. Chajgotra, Mohan Lal. **Petrological and petrochemical study of Kholdedni granites, southwest of Doda, Jammu Himalaya.** Jammu. Dr C L Munshi and Dr B L Dhar.

2. Gholinejad, Mehran. **Mineralogical and geochemical studies of bauxites of Paduvari Plateau, South Kanara, Karnataka with particular reference to its beneficiation.** Bangalore. Dr K S Ananthamurthy, Department of Geology, Bangalore University, Bangalore.

3. Mishra, Jaideep Kumar. **Application of remotely sensed data from satellite for cloud parameter estimation.** IIT Delhi. Dr O P Sharma, Centre for Atmospheric Sciences, Indian Institute of Technolgy, Delhi.

4. Raja Sekhara Reddy, A. **Hydrogeomorphological studies in western parts of Ranga Reddy Dist, A P.** Osmania.

5. Shahri, Mohd Reza Neifi. **Modeling of flood flows in natural water sheds.** Roorkee.

6. Singh, Brajesh Kumar. **Stratigraphy and palaeomagnetism of a part of Mandu Plateau, Dhar Distt (M P).** Vikram. Dr S F R Khadri.

7. Venkatachalapathy, R. **Mid-Cretaceous foraminiferal biostratigraphy, palaeoecology and the boundary events in the Cauvery Basin, India.** Madras. Dr V Ragothaman.

8. Venkataramana, D. **Subsurface conductivity imaging using MT and TEM data.** Osmania.

ENGINEERING

1. Alok Kumar. **A versatile data path synthesis approach based on heuristic search.** IIT Delhi. Prof Anshul Kumar, Department of Computer Science and Engineering, Indian Institute of Technology, Delhi.

2. Balachandra, Satish. **Intracranial system response to volume perturbations : Theoretical and experimental studies.** IIT Delhi. Prof Sneh Anand, Centre for Biomedical Engineering, Indian Institute of Technology, Delhi.

3. Das, Sisirkumar. **Studies on transverse electromagnetic (TEM) cell.** Anna.

4. Ebenezer, D. **Some design methods for optimal recursive resonant digital lowpass differentiators.** Anna.

5. Jain, Dileep Kumar. **Dynamics of urban energy economy system with particular reference to the city of Jaipur.** IIT Delhi. Prof P S Satsangi, Director, Dayalbagh Engineering Institute, Dayalbagh, Agra and Dr D P Kothari, Centre of Energy Studies, Indian Institute of Technology, Delhi.

6. Jain, Mahavir Prasad. **In situ behaviour of spliced piles and intact piles.** Roorkee.

7. Jain, Seema. **Development and study of the mechanical properties, thermal degradation and electrical behaviour of bamboo fibres reinforced plastic (BFRP) composite.** IIT Delhi.

Dr Rakesh Kumar, Instrument Design Development Centre, Indian Institute of Technology, Delhi and Prof U C Jindal, Department of Mechanical Engineering, Delhi College of Engineering, Delhi.

8. Kappor Chand. **Elastohydrodynamic analysis of circular and non-circular journal bearings with non-Newtonian lubricants.** Roorkee.

9. Karisiddappa. **Finite element analysis of hyperbolic cooling towers under wind loads.** Roorkee.

10. Krishan, Arvind. **Built form-'solar envelope' energy gain behaviour and performance.** IIT Delhi. Prof N K Bansal, Centre for Energy Studies, Indian Institute of Technology, Delhi.

11. Loganathan, S. **Structure and strengthening of evaporated chromium films.** IIT Delhi. Dr Amitabh Jain, Industrial Tribology, Machine Dynamics and Maintenance Engineering Centre, Indian Institute of Technology, Delhi.

12. Mishra, Hemant Kumar. **Flow development in rectangular channels and ducts.** Roorkee.

13. Mohd Islam. **Studies on the effect of upstream flow conditions on the performance characteristics of turbine flowmeter.** IIT Delhi. Prof V Seshadri and Dr S N Singh, Department of Applied Mechanics, Indian Institute of Technology, Delhi.

14. Pradeep Kumar. **Optimization of process variables affecting the quality of Al-11.% Si alloy castings produced by V process.** Roorkee.

15. Prasada Rao, P N V R S S V. **Structure property relations in 10 Mn-3C-7C2 white irons alloyed with 1.5-5.0 copper.** Roorkee.

16. Rajullu, Kakumani Govinda. **Nucleate pool boiling heat transfer from restraint cavity surfaces.** Roorkee.

17. Rangaiah, C. **Recognition and surface reconstruction of 3D objects.** IIT Delhi. Dr M Hanmandlu and Prof K K Biswas, Department of Electrical Engineering, Indian Institute of Technology, Delhi.

18. Sajeev, V. **An investigation into the broaching process.** IIT Delhi. Prof U R K Rao, Department of Mechanical Engineering, Indian Institute of Technology, Delhi.

19. Sankara Reddy, Yeduri Huma. **The usage of detailed physical models for image formation in a machine vision.** Andhra.

20. Sharma, Chetanya Prakash. **Structure-property relations in high manganese chromium copper white irons.** Roorkee.

21. Shrivastava, Nishant Kumar. **Optimal stress locations and stress recovery procedures in finite element method.** IIT Delhi. Dr D K Sehgal and Prof S M A Kazimi, Department of Applied Mechanics, Indian Institute of Technology, Delhi.

22. Sibal, Vinod Kumar. **Studies to improve the effectiveness of freight trains in the context of Indian Railways.** IIT Delhi. Dr Arun Kanda, Department of Mechnical Engineering, Indian Institute of Technology, Delhi.

23. Singh, Sajjan Pal. **Analysis and design optimization of self excited cage induction generator.** Roorkee.

24. Srinivasan, K R. **Modification of rubber toughened polypropylene with polycarbonate and glass fibres.** IIT Delhi. Prof A K Gupta, Centre for Polymer Science and Engineering, Indian Institute of Technology, Delhi.

25. Srivastava, Anju. **Preparation and properties of endo-5-norbornene-2, 3-dicarboximide (nadimide) end-capped imide resins.** IIT Delhi. Prof (Mrs) I K Varma, Centre for Polymer Science and Engineering, Indian Institute of Technology, Delhi.

26. Sudhir, G. **Cooperative algorithms for stereo and motion analysis.** IIT Delhi. Dr R Bhat and Prof K K Biswas, Centre for Applied Research in Electronics, Indian Institute of Technology, Delhi.

27. Sujit Kumar, G. **Investigations on energy conservation potential of ground for solar space conditioning of earth coupled buildings.** IIT Delhi. Dr S C Kaushik, Centre for Energy Studies, Indian Institute of Technology, Delhi.

28. Sunita, Chohan. **Static and tracking state estimation in power system with bad data analysis.** IIT Delhi. Prof S C Tripathy and Dr R Balasubramanian, Centre of Energy Studies, Indian Institute of Technology, Delhi.

29. Tewari, Sudarshan. **On the performance of a coherent heterodyne optical fiber communication system.** Roorkee.

30. Umamaheswari, B. **Eigen structure assignment in linear state space and descriptor systems with multiple design objectives.** Anna.

31. Vinodkumar, K. **Contributions to system software.** Patel. Prof P Thrimurthy.

TECHNOLOGY

1. Abdel-Sameh, Ashraf Saad Zaghlool. **Simulation study of automatic regulation of canal.** Roorkee.

2. Bony, Morjono. **Techno economic and management (team) approach to river basin planning.** Roorkee.

3. Gupta, Anuja. **Adsorption studies of some surface active agents on lignin.** Roorkee.

4. Kirkos, Abate Tadessew. **Seepage from canal with asymmetric drainages.** Roorkee.

5. Roopanwal, Arun Kumar. **Effect of comonomers and chemical treatments on the thermo-oxidative stabilization of acrylic precursors and resulting carbon fibres.** IIT Delhi. Prof P Bajaj, Department of Textile Technology, Indian Institute of Technology, Delhi and Dr (Mrs) G R Phalgumani, Director, CTL, Textile Committee, 79, Dr Anne Besant Road, Worli, Bombay.

EDUCATION NEWS INDEX

A list of select articles and editorials on education from newspapers received in the AIU Library during August 1994

EDUCATIONAL PHILOSOPHY

Krishna Kumar. Only closed minds make the grade. **Indian Express** 17.8.94.

EDUCATIONAL PSYCHOLOGY

Bhagat, Rasheeda. Classrooms as armed camps. **Indian Express** 14.8.94.

EDUCATIONAL SOCIOLOGY

Ahmed, Firoz Bakht. Educating the mulim girl- child. **Deccan Chronicle** 21.8.94.

Ajaz Ashraf. Limits of reservation. **The Pioneer** 21.8.94.

CASTEISM IN jobs (Editorial). **Patriot** 31.8.94.

Gupta, Barun Das. Loreto's efforts impress UN. **Indian Express** 31.8.94.

Jerath, Arati R and others. Reservation to spur growth of private colleges. **Indian Express** 31.8.94.

EDUCATIONAL POLICY & PLANNING

FOR REAL education (Editorial). **National Herald** 5.8.94.

Joshi, Uma. Schools : All work and little play. **National Herald** 4.8.94.

Krishna Kumar. Resistance to reform : Yashpal report one year later. **The Times of India** 8.8.94.

Mojumdar, Modhumita. The burden of school education. **The Statesman** 7.8.94.

Shukla, S. Beyond the bookloads. **The Hindustan Times** 16.8.94.

EDUCATIONAL ADMINISTRATION

Ahmed, Firoz Bakht. What ails govt schools? **Patriot** 30.8.94.

Amrik Singh. Another university for Delhi. **The Times of India** 22.8.94

ASSAM UNIVERSITY tangle (Editorial). **The Assam Tribune** 9.8.94.

CAMPUS VIOLENCE (Editorial). **Deccan Herald** 10.8.94.

Chiranjeevi, V. Of students, teachers and parents. **The Hindu** 2.8.94.

Dandapani, S. Is punishment taboo in schools? **Deccan Herald** 28.8.94.

FAMISHED DU (Editorial). **The Hindustan Times** 27.8.94.

Ghosh, Dharmabrata. A case of paradigm lost for Indian universities. **The Telegraph** 15.8.94.

Gill, P P S. Education system needs revamp? **The Tribune** 28.8.94.

Gupta, Y P. ICAR scientists : A frustrated lot. The Hindu 16.8.94.

INDUSTRY-INSTITUTION linkages (Editorial). The Hindu 12.8.94.

Muthanna, Yash. For a better education system. **The Hindu** 2.8.94.

NEED FOR academic audit (Editorial). The Hindu 3.8.94.

Shamim Aleem. Education : Bureaucracy at the crossroads. **The Hindu** 30.8.94.

Shishir, C. On being a marimallappan. **Deccan Herald** 21.8.94.

UNIVERSITY BLUES (Editorial). **The Tribune** 27.8.94.

EDUCATIONAL BUILDING

Narayana, A. Campus on the rocks : Kannada University. **Deccan Herald** 27.8.94.

CURRICULUM

Dandapani, S. Need for child-oriented curriculum. **The Hindu** 2.8.94.

Gill, J S. Education can help. **The Hindustan Times** 27.8.94.

LANGUAGE & LANGUAGE POLICY

Banerji, Sures Chandra. How to make Sanskrit more job relevant. **The Telegraph** 29.8.94.

Joshi, Vijaya. Sanskrit is not dead, ignorance is thriving. **Free Press Journal** 21.8.94.

Osborn, Alan. English, august among second languages. **The Economic Times** 28.8.94.

Sethumadhava Rao, P H. Making languages work. **The Hindustan Times** 30.8.94.

SCIENCE EDUCATION

Dayak, Meenaxi. A creative experience. **Deccan Herald** 28.8.94.

Iqbal Malik. Classroom biology. **The Hindustan Times** 13.8.94.

VOCATIONAL EDUCATION

Bhuwan Mohan. Engineering the environment. **The Times of India** 17.8.94.

Borbora, Saundarjya. Vocationalisation of first degree education: A novel scheme of U G C. **The Assam Tribune** 19.8.94.

Nawaz, Heera. Lacunae in training lawyers. **Deccan Herald.** 7.8.94.

Padmanabhan, C B. Vocational courses in vogue again. **The Hindu** 2.8.94.

Ramesh Kumar, S. Indianising technical learning. **The Hindu** 30.8.94.

Rego, Stephen. Blacklist blues. **Free Press Journal** 28.8.94.

________. Cold calculation. **Free Press Journal** 28.8.94.

Sen, Sujata. Technocrats or technopeasants? **The Statesman** 28.8.94.

Sharma, P B. Update teaching to master high tech. **Patriot** 18.8.94.

DISTANCE EDUCATION

Viswanatha Reddy, Kethu. Distance education : Learner first. **Deccan Chronicle** 29.8.94.

TEACHERS & TEACHING

Agrawal, Damodar. Why teachers keep away from classes? **The Statesman** 25.8.94.

Jayapal, Maya. Oh to be a teacher. **National Herald** 26.8.94.

Mirajkar, Archana. New degree course for teachers. **The Statesman** 11.8.94.

Padgaonkar, Latika. When teachers learn to listen? **The Statesman** 11.8.94.

Parthasarathy, R. The skills of lecturing. **The Hindu** 30.8.94.

Prasad, Uma. Role of teachers in national integration. **The Hindu** 9.8.94.

Syed Imtiaz Ali and Jagdisan, S. Teaching English as a foreign language. **The Hindu** 2.8.94.

TEACHING SHOPS: The infallible enterprise (Editorial). **The Times of India** 21.8.94.

Tejinder Kaur. Teachers do teach. **The Tribune** 7.8.94.

EDUCATIONAL TECHNOLOGY

CAREER BIRDS flock to Delhi (Editorial). **The Times of India** 21.8.94.

Kanchana. CSIR database : A ready reackoner. **The Economic Times** 31.8.94.

Padmanabhan, G. Listening to societal needs. **The Hindu** 10.8.94.

Rao, C N R. Networking people of excellence. **The Hindu** 10.8.94.

Sunil Kumar, V. Are computer schools taking you for a ride? **Deccan Chronicle** 21.8.94.

EDUCATIONAL EVALUATION

Desai, Bharat. Takesway answer-sheets for MP students. **The Telegraph** 8.8.94.

Venugopal, Y. The concept of evaluation. **The Hindu** 23.8.94.

ECONOMICS OF EDUCATION

Arunachalam, M. Reading out to educated unemployed. **National Herald** 27.8.94.

Baru, Sanjaya. Trends in employment : Sifting good news from bad. **The Times of India** 24.8.94.

FINANCING UNIVERSITIES (Editorial). **The Times of India** 28.8.94.

FUNDS FOR research (Editorial). **The Hindustan Times** 16.8.94.

Gupta, Monobina. Soft loans for higher education : Govt plays indulgent shylock to needy students. **The Telegraph** 29.8.94.

Khullar, K K. Ban on capitation fee. **Patriot** 24.8.94.

Majumdar, Tapas. Old world is the new world. **The Telegraph** 8.8.94.

Mitra, Anjan. The lone ranger. **The Hindustan Times** 30.8.94.

Rao, G S. What price is education? **Free Press Journal** 8.8.94.

Roy, Ash Narain. Cash crunch on the campuses. **The Hindustan Times** 30.8.94.

Vedantam, Vatsala. Subsidies in professional education: Who pays for it, anyway? **Deccan Herald** 13.8.94.

Yusuf Khan, Sakina. Leave and let leave. **The Times of India** 14.8.94.

LIBRARIES & BOOKS

Arunachalam, Subbiah. Collection imperative in varsity libraries. **The Hindu** 16.8.94.

Balan, Sridhar. Taking books for granted. **The Economic Times** 7.8.94.

Hymas, Charles and Cohen, Julie. Europe's libraries exploit UK authors in fees dodge. **The Times of India** 17.8.94.

Narayan, Hemendra. A library that survived time's onslaught. **The Statesman** 28.8.94.

STUDENTS & STUDENT ACTIVITIES

Agrawal, Damodar. Student politics & civil services. **Deccan Herald** 14.8.94.

RAGGING (Editorial). **The Assam Tribune** 5.8.94.

PHYSICAL EDUCATION & SPORTS

Amrik Singh. Why this neglect of sports? **The Hindu** 10.8.94.

SPECIAL EDUCATION

Khullar, K K. Educating the handicapped. **Patriot** 15.8.94.

ADULT EDUCATION

Behl, R K. Whither total literacy campaign? **The Tribune** 22.8.94.

Das, Vidhya. Education for all : A question of alternatives. **The Telegraph** 1.8.94.

Gopinathan Pillai, P. Continuing education : A case study. **The Hindu** 23.8.94.

Jain, G P. Sixty hours to literacy. **Indian Express** 17.8.94.

Mittra, Chandra. For a better tomorrow. **The Hindustan Times** 6.8.94.

Padmanabhan, C B. What total literacy means. **The Hindu** 21.8.94.

ELEMENTARY & SECONDARY EDUCATION

Molahalli, Eunice M. Education : Giving them a good start. **The Hindu** 9.8.94.

Raghunath, M S. Are children beasts of burden? **Deccan Herald** 21.8.94.

COMPARATIVE EDUCATION & AREA STUDIES

Rajagopalan, T. Preparing them for life activities. **The Hindu** 16.8.94.

INTERNATIONAL COOPERATION

Gautham Machaiah, M. India included in US exchange scheme. **Indian Express** 31.8.94.

INSTITUTIONAL PROFILE

Bhattacharjee, Swati. Institute for studying Indo-European ties: Institute of Indo-European Studies, Panaji. **The Telegraph** 1.8.94.

CAREER BY choice, not change: Institute for Career Studies, Lucknow (Editorial). **The Times of India** 31.8.94.

Mohanty, B B. Going places, going great: Indian Institute of Mass Communication, Orissa. **The Telegraph** 19.8.94.

Prahallada, N N. A teacher's college completes 30 years of service: Regional College of Education, Mysore. **Deccan Herald** 7.8.94.

Raman, V Y D. Serving the student community : Sri Venkateswara University. **The Hindu** 16.8.94.

Vedantam, Vatsala. Outstanding American universities, Kellogg : A business school which means business. **Deccan Herald** 14.8.94.

BIOGRAPHICAL PROFILE

Amrik Singh. Dr Attar Singh : A man of many parts. **The Tribune** 26.8.94.

Chawla, K S. Father of Indian horticulture: Dr Ganda Singh Cheema. **The Tribune** 6.8.94.

Parthasarathy, R. Ernst Alexanderson : Gave original ideas though away from the academics. **The Hindu** 31.8.94.

Ravi. A multifaceted scientist : Prof D V S Jain. **National Herald** 9.8.94.

Ministry of Human Resource Development
(Department of Education)
ES-4 Section

COMMONWEALTH SCHOLARSHIPS AND FELLOWSHIPS PLAN-1995-96

I. Applications are invited from Indian nationals on plain paper in the FORMAT GIVEN BELOW for the award of Commonwealth Scholarships tenable from October, 1995 for higher studies/research/specialised training in the subjects mentioned below in the United Kingdom (70 nominations). (PREFERENCE WILL BE GIVEN TO MERITORIOUS FEMALE CANDIDATES).

II. **VALUE :** Scholarships cover economy class air passage (both ways) to scholar only, fees, adequate maintenance and other allowances.

III. **AGE :** Candidates should not be above 34 years of age as on 30.9.94 i.e., those who were born earlier than 1.10.1960 are not eligible to apply. Preference will, however, be given to candidates who are below the age of 30 years. The upper age limit may be relaxed by two years in the case of SC/ST candidates.

IV. **LEVEL :** Except where otherwise specified below, as in the case of Medicine, the scholarships will be awarded for studies leading to a doctoral degree. Candidates who have already completed Ph.D or about to complete it, are unlikely to be considered.

SUBJECT FIELDS.

(a) **MEDICINE :** 1. Cancer Research (including Cancer Epidemiology), 2. Cardiology, 3. Gynaecology.

(b) **ENGINEERING AND TECHNOLOGY :** 1. Computer Studies, 2. Electronics, 3. Environmental Studies, 4. Remote Sensing Technology, 5. Communication Engineering, 6. Bio-technology/ Biochemical Engg., 7. Robotics (including Artificial Intelligence).

(c) **SCIENCE (PURE AND APPLIED) :** 1. Mathematics 2. Molecular Biology. 3. Physics 4. Chemistry (including Pharmaceutical/Medicinal Chemistry.

(d) **AGRICULTURE AND ALLIED FIELDS :** 1. Animal Husbandry, 2. Agronomy 3. Forest Economics.

(e) **HUMANITIES AND SOCIAL SCIENCES :** 1. History 2. Sociology 3. Management Studies, 4. Fine Arts (including Western Painting, Art History, Graphic Design and Sculpture). 5. Economics 6. Philosophy.

V. **MINIMUM QUALIFICATIONS AND EXPERIENCE REQUIRED :** The Candidates must have completed tertiary education in English Medium.

(a) **MEDICINE :** MD/MS in the subject area selected and should have atleast 60% marks at either Bachelor's or Master's degree level with two years teaching/research/or practical experience after obtaining Post-graduate degree relating to the opted field of study as on 30.9.94. Scholarships are only for specified project oriented training in higher techniques and methodology. These are not for generalised training or for studies/training leading to a degree or diploma.

(b) **ENGINEERING AND TECHNOLOGY :** First Class Master's Degree in Engineering/Technology in the subject-area selected or in a related area with two years teaching/research or practical experience after obtaining Post-graduate degree relating to the opted field of study as on 30.9.94.

(c) **SCIENCE (PURE AND APPLIED) :** First Class Master's Degree in the subject area selected or in a related area with two years teaching/research or practical experience after obtaining Post-graduate degree relating to the opted field of study as on 30.9.94.

(d) **AGRICULTURE AND ALLIED FIELDS :** First Class Master's Degree in the subject areas selected or in a related area with two years teaching/research or practical experience after obtaining Post-graduate degree relating to the opted subject field of study as on 30.9.94.

(e) **HUMANITIES AND SOCIAL SCIENCES:** Master's Degree securing minimum 55% or above marks in the subject area selected or in a related area with two years teaching/research or practical experience after obtaining Post-graduate degree relating to the opted field of study as on 30.9.94 subject to the following : (i) **HISTORY :** Background in European History is desirable. (ii) **FINE ARTS :** Qualification for Fine Arts is 5 years National Diploma in Fine Arts from a recognised institution/University. Master's Degree in Fine Arts/History of Arts desirable. Five black and white or coloured slides or prints/photographs may be attached with the application. (experience not essential). (iii) **MANAGEMENT STUDIES :** First Class Post-graduate Degree in Management studies is essential. P.G. Programme in Business Management of Xavier labour Relations Institute, Jamshedpur and Indian Institute of Management. Ahmedabad, Bangalore, Calcutta and Lucknow is a recognised programme equated with M.B.A. degree of an Indian University.

VI. **LAST DATE FOR THE SUBMISSION OF APPLICATION :** Application on plain paper (as per format given below) alongwith the required documents (attested) copies of all certificates/degrees/diplomas have to be attached) should reach the Under Secretary, External Scholarships Division (ES. 4 Section) Ministry of Human Resource Development (Department of Education) A.1/W.3 Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi- 110001. latest by 10.10.94.

VII. **IMPORTANT INSTRUCTIONS**

1. A candidate may apply for only one subject of his or her choice.
2. As a condition of award, the Commission or a host institution in Britain may also require a candidate to take particular English Tests and/or training in English.
3. Generally, double the number of nominations are invited by donor countries against the actual number of scholarships offered by them. The final selection rests with the donor Governments.
4. Nomination of a candidate by Government of India does not guarantee final selection or placement in the donor country. The donor country will make its own selection out of overall nominees recommended by all the participating countries in the programme.
5. Mere fulfilment of minimum requirements as laid down in the advertisement does not qualify a candidate for interview. Interview letters are sent only to a limited number of candidates after their applications are examined by a Committee of experts.
6. Applications must be accompanied by attested copies (Certificates should be attested by a Competent Authority. Self attested certificates will not be accepted) of all the certificates regarding date of birth, diplomas, degrees marks sheet in respect of all the examinations passed along with experience certificate of Employment and one copy of recently taken passport size photograph with signature (to be pasted on the application form).
7. Except where specifically stated otherwise, as in the case of Medicine, these awards are primarily meant for study leading to doctoral (Ph.D) degree in the donor country. Applicants already holding a Doctoral (or about to obtain one) are not ordinarily eligible for consideration. Candidates who have already done a Ph.D in India or abroad will not be considered for a second Ph.D.
8. Candidates who have already been abroad for studies/training/specialisation either on scholarships or on their own, for a period of exceeding six months are eligible to apply if they have been in India for atleast two consecutive years after returning from abroad.
9. Candidates who are abroad will, if called for interview, have to travel at their own expense. Selected candidates will be required to execute a bond with surety, to return to India immediately on completion of training, alongwith other conditions including stay in India for two years.
10. In case of candidates qualifying from Universities, Institutions which do not give class or Division, requirements in lieu of Ist Class would be 60% marks. Where grades are awarded, the candidates are required to furnish exact percentage of marks and indicate the conversion formula.
11. Candidates will be expected to have some knowledge of India and of the donor country.
12. Candidates who are employed must apply through their Employers. Candidates belonging to the All India Services, should send their applications through their Cadre Controlling Authority. (No objection certificate from employer should invariably be submitted on or before the time of interview, otherwise, candidates will not be allowed to appear for interview).
13. It is very important that applicants who are in employment to which they wish to return should have an assurance that, if their nomination is successful, they will be granted sufficient leave of absence. In general any candidates undertaking research for a Ph.D can be expected to need 36 months study in the United Kingdom eventhough in the first instance the award will only be offered for one or two years.
14. Candidates belonging to SC/ST community, must attach an attested copy of certificate from the competent authority i.e. First Class Magistrate S.D.M/District Magistrate/Collector).
15. The candidates who are doing M.Phil. after completion of Master's Degree, actual period of research will be taken into consideration as experience (A certificate and progress report to that effect from the University/Institute should be attached, otherwise no credit will be given).

16. While indicating the period of past experience and stay abroad, candidates should mention the specific dates.
17. As these scholarships are offered by Foreign Government, the applications should be submitted in English only.
18. Applications in subject-fields other than those specified in the advertisement will not be considered.
19. Candidates who do not possess the essential qualifications need not apply.
20. Candidates must furnish a clear and precise programme of study/research (minimum 500 words) justifying that their study/research can be carried out in the United Kingdom. Candidates are advised to describe their research proposals carefully as these will be a primary condition in selection.
21. Incomplete applications and applications received late after the stipulated date will not be considered and no correspondence will be entertained.
22. Documents submitted alongwith the application will not be returned. Hence, candidates are advised to send only attested copies of the certificates.
23. CANVASSING IN ANY FORM WILL BE A DISQUALIFICATION.
24. In case no interview letter is received by an applicant by 31st December, 1994, it may be presumed that he/she has not been selected. *No correspondence will be entertained in this regard.*
25. THE DECISION OF SELECTION COMMITTEE SHALL BE FINAL NO REPRESENTATION IN THIS REGARD WILL BE ENTERTAINED.

N.B.: NO APPLICATION FORMS ARE SUPPLIED BY THIS MINISTRY.

BEFORE FILLING UP THE APPLICATION, CANDIDATES ARE ADVISED TO GO THROUGH THE INSTRUCTIONS CAREFULLY.

PROFORMA FOR APPLICATION

1. Name of the Scholarship Scheme :
2. (a) Group of Subjects .
   (b) Subject :
   (indicate any one of the subjects given in the advertisement)
   (c) Country
3. (i) Name & Telephone No (if any)
   (in capital letters)
   (ii) Full mailing contact address
   (iii) Full name of Father/Mother/Guardian
   (Note : Candidates may name one or more of these at their option).

RECENT PASSPORT SIZE PHOTOGRAPH DULY SIGNED AND (NAME SHOULD BE GIVEN IN CAPITAL LETTERS) TO BE PASTED HERE, WITHOUT PHOTO APPLICATION WILL BE TREATED INCOMPLETE.

   (iv) Marital Status :
4. Date of birth and the State to which the candidate belongs (Certificate regarding proof of age to be attached).
5. Whether a member of SC/ST : (If so, give full particulars, Enclose a certificate duly signed by Ist Class Magistrate).
6. Academic record starting from High School/Higher Secondary (Attested/Photostat copies of certificates to be attached).

Name of the University Board/Instt.	Examination Passed	Year of passing	Division class with position, if any	% age of marks obtained and position if any*	Subjects taken

* In case no division/class is awarded and only grading is done the conversion formula adopted may be mentioned.

7. Details of Professional/practical training and research experience, specifying the period and number and titles of papers published, previous employment, with name and address of the employer with date of employment, if any.
8. Nature of the present employment with date of appointment, designation and the name and address of the employer.
9. Names, designation and address of three referees who are familiar with your work. (Two of them should be persons who taught you in an area of study relevant to your proposed course. The third may be your employer or a person with whom you have worked professionally).
   (NB : Candidates called for interview will have to bring with them the comments of all three referees).
10. Have you been abroad? If so, give particulars of the Country & the period. Also mention the year & date of return to India.
11. Proposed Programme of Study/Research/training, specifying
    (i) the work at present engaged in
    (ii) nature & programme of proposed study/research/ training.
    (iii) Future plans/prospects after the proposed studies/ research/ training, and
    (iv) how are these related to the advancement of Knowledge/ Science & Technology in India?

PLACE :
DATE :

SIGNATURE OF THE CANDIDATE

davp 94/267

U.P. HIGHER EDUCATION SERVICES COMMISSION

18-A, Nyaya Marg, Allahabad-211 001

Important Notice

Advertisement No. 20 - Addendum (Extension of Last Date)

The last date for receipt of duly completed Application forms in the office of the Commission for the post of lecturers for non-government degree/post graduate colleges affiliated/ associated with different universities in Uttar Pradesh as published in Commission's advertisement no. 20 dated 12.7.94 **has been extended from 7.9.94 to 21.9.94**.

It is also clarified that the candidates belonging to **physically handicapped, dependents of freedom fighters and ex-servicemen categories** will also be eligible to get the benefit of reservation as per norms and guidelines framed by the state government from time to time.

SECRETARY

UNIVERSITY OF POONA

STATE ELIGIBILITY TEST (SET), 1994

In order to be eligible for appointment as Lecturer in Faculties of Arts, Social Sciences, Commerce, Science, Law and Education in Universities and Affiliated Colleges in Maharashtra, it is essential to clear NET of UGC or SET of Govt. of Maharashtra. University of Poona, as State Agency, would conduct SET at S.N.D.T. (South Bombay), Bombay (Kalina, North Bombay), Pune, Kolhapur, Nashik, Jalgaon, Aurangabad, Nanded, Amravati and Nagpur Centres, on Thursday, 17th November, 1994 in —

Marathi, Hindi, English, History, Economics, Philosophy, Psychology, Sociology, Politics, Defence and Strategic Studies, Home Science, Library and Information Science, Journalism and Mass Communication, Mathematics, Statistics, Physics, Chemistry, Botany, Zoology, Geology, Geography, Computer Science, Microbiology, Electronics Science, Commerce, Law, Education and Physical Education.

Application Form and Prospectus available on payment of Rs 100/- by Demand Draft to the **Registrar, University of Poona, Ganeshkhind, Pune-411 007.**

Last date of application : September 30, 1994.

Advt. No. : 58
Date : 1/9/94

Subhaschandra Bhosale
Registrar and Member Secretary (SET)

CLASSIFIED ADVERTISEMENTS

MOTHER TERESA WOMEN'S UNIVERSITY

CORRECTION TO BE MADE

1. The Last Date for receiving the filled-in-Application is extended upto **17th October, 1994.**

2. The Cost of Application for M.A./M.Ed. is Rs. 40/- instead of Rs. 30/-

3. The Duration for M.Phil. is Two years instead of ONE Year.

REGISTRAR-IN-CHARGE

ST. BERCHMANS' COLLEGE CHANGANACHERRY

KERALA-686 101

WANTED LECTURERS in

1 Zoology — Anticipated, Open Merit, Quota

2. English — Anticipated, Open Merit, Quota

3. Commerce — Anticipated, Open Merit, Quota.

The above posts are subject to sanction by the Mahatma Gandhi University and review under UGC scheme.

Age : As per Government and UGC Regulations.

Qualifications : Ist or IInd class Master's Degree in the concerned subject with not less than 55% and pass in the UGC Eligibility Test.

Apply to the Principal **within one month from the date of publication of this** notification. Applications and other details can be had from the college office on payment of Rs. 120/-.

PRINCIPAL

INDIAN INSTITUTE OF PUBLIC ADMINISTRATION

INDRAPRASTHA ESTATE, RING ROAD, NEW DELHI - 110002

The Indian Institute of Public Administration, a National Institute for the study of public administration, engaged in undertaking research, consultancy and training programmes for civil services, invites applications for the following posts.

Registrar : One

Pay scale : Rs. 4500-150-5700-200-7300

Dy. Registerars : Two (One for Administration and one for Finance).

Pay scale : Rs. 3700-125-4950-150-5700

Prescribe from of application and

TATA INSTITUTE OF SOCIAL SCIENCES

[illegible]

Post Box No 8313 Deonar Bombay 400 088

Admission Announcement for 1994-95

1 Certificate in Research Methodology (one semester full-time)

2 Advanced Certificate Course in Social Welfare Administration (one year evening programme)

3 M Phil in Social Work/Social Sciences (full-time and part-time)

4 Ph D in Social Work/Social Sciences (full-time and part-time)

ELIGIBILITY

1. Certificate In Research Methodology : Master's Degree in Social Sciences/Social Work with at least 50% of the marks or grade point average of 3 0 under the University Grants Commission 7 point grade system. SC/ST applicants should have obtained 45% of the marks or grade point average of 2 50 under the UGC 7 point Grade System

2. Advanced Certificate Course In Social Welfare Administration: Master's Degree in Social Work with 3 years experience or a Bachelor's Degree in Social work with 5 years experience in the field of development administration or administration of Social Welfare Organisations, Social Services and Social Security programmes.

3&4 . M.Phil/Ph.D Programme:

Master's Degree of the relevant faculty with 55% of the marks or grade point average of 3 5 under the University Grants Commission 7 point grade system

Brochure and Application form:

Sr No	Programme	Dealing Officer	Cash Timings	Cost Rs	Last Date for receiving filled in application	Programme Commences
1	Certificate in Research Methodology	Assistant Registrar (Academic)	Week days 10 30 a m to 2.00 p m Saturday. 10.30 a m. to 11 30 a m	20/-	Oct. 14, 1994	Nov 28, 1994
2	Advanced Certificate Course in Social Welfare Administration	Section Officer (STP)	-do-	20/-	Nov 05, 1994	Nov 28, 1994.
3 & 4	M Phil/Ph.D	Section Officer (Meetings)	- do-	50/-	Forms accepted throughout the year	On the selection of the candidate after interview.

The request for application form should accompany a self addressed stamped (Rs 6/-) envelope (20 x 26 cms.) The demand draft for cost of application form should be drawn in favour of TATA INSTITUTE OF SOCIAL SCIENCES The cover should be superscribed with the title of the programme.

Special provisions for SC/ST candidates : 15% and 7 1/2 of seats are reserved for SC/ST candidates, respectively, for programmes No 1 and 2 only.

FELLOWSHIP:

As per rule, all candidates who are declared eligible for Junior Research Fellowship on the basis of UGC-CSIR/NET examinations and registered as M Phil/Ph D scholar, are eligible for Junior Research Fellowship, subject to the conditions laid down by the University Grants Commission.

For further details regarding admission procedures, fees, etc , respective brochures may be consulted

Bombay 4 9 94

Dr. S.K.Bandyopadhyay.
REGISTRAR

details about age, qualifications, experience, etc., can be obtained from Registrar free of charge, by sending a self-addressed envelope of the size of 25 cm x 10 cm.

Appointments may also be made on deputation. Qualifications/age relaxable in the case of exceptionally well qualified candidates The Institute may also consider suitable candidates who might have not applied. The Institute reserves the right to fill or not to fill the post/posts. Other things being equal, preference will be given to SC and ST candidates.

Candidates called for interview from outside Delhi will be reimbursed actual 1st Class rail fare to and fro by the shortest route on production of ticket number. Completed applications in the prescribed form should reach the Director on or before October 7, 1994.

TEZPUR UNIVERSITY

POST BOX NO. 72
TEZPUR-784001

Advertisement No. TU/FM/3/11/94 dated 12 August, 1994.

Applications from eligible Indian citizens having requisite qualification are hereby invited for filling up the following posts in the Department of Management Sciences at the newly established Tezpur University, (established by an Act of Parliament in 1994).

1. Professor : 1(one) post

Essential qualifications : Ph.D. or equivalent research work or Fellow of IIMS/ICA/ICWA; Teaching/Consulting/Professional experience of 10 years.

2. Reader : 1 (one) post

Essential qualifications : Ph.D. or equivalent research work or Fellow of IIMS/ICA/ICWA; Teaching/Consulting/Professional experience of 5 years.

3. Lecturer : 1 (one) post

Essential qualifications : Ph.D. or Fellow of IIMS/ICA/ICWA or Masters Degree plus professional experience of 2 years.

Applications (eight copies for post of Professor, six copies for the post of Reader and five copies for the post of Lecturer) in plain paper giving the following particulars along with copies of certificates and mark-sheets from HSLC/Matriculation onwards, testimonials and the details of research and publication in support of eligibility, and an application fee of Rs. 25/- (Rupees twenty five) (Rs. 10/- in case of candidates belonging to SC/ST/OBC/Physically handicapped/Ex-servicemen) should reach the undersigned **on or before 30 September, 1994.** The application fee is payable by Bank Draft drawn in favour of Registrar, Tezpur University, payable at the SBI Tezpur Branch.

PARTICULARS FOR APPLICATION

1. Advertisement No:
2. Name of the post applied for:
3. Name of the applicant (in full, in block letters):
4. Name of father:
5. Permanent Home address:
6. Address for communication:
7. Educational qualifications showing the subjects; marks obtained, Division/Class, Institution etc: from HSLC onwards
8. Date of birth (By Christian era):
9. Age on 1.1.94:
10. Past experience:
11. Present occupation:
12. Name of Employer, if employed:
13. Name of two referees:
14. Citations of work, if any:
15. Details of fee deposited:
16. Signature of the applicant:

Application incomplete in any respect will not be considered. Person in employment should apply through proper channel with a "No objection certificate" from his/her employer.

The University reserves the right to negotiate with suitable person who may not have applied formally. The University also reserves the right to fill up or not to fill up any post(s) or call only selected candidates for interview.

Scale of Pay :

For post of Professor :
Rs. 4500-150-5700-200-7300.
For post of Reader :
Rs. 3700-125-4950-150-5700.
For post of Lecturer :
Rs. 2200-75-2800-100-4000.

In addition to pay, allowances as per Central Govt. employees posted at Tezpur, Assam will be admissible.

The University will not be held responsible for any postal delay or late delivery of applications.

D.C. Bhattacharyya
REGISTRAR

MODEL INSTITUTE OF EDUCATION & RESEARCH

B.C. ROAD, JAMMU

STAFF VACANCIES

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2. Reader (1), **Lecturers** (2) in Computer Science : M.Tech/M.Sc Computer Sc/MCA or M.Sc PGDCA with Experience. For Reader, Ph.D or 5 years teaching at PG level essential

3. Librarians (3) : M.LIB.Sc or B.Lib with experience.

The above posts carry University Scale with DA & PF etc. under Institute rules.

Apply with full Biodata & Coloured Photograph within 30 days enclosing a Crossed P.O. of Rs 50/- in Favour of the Director.

DIRECTOR

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